



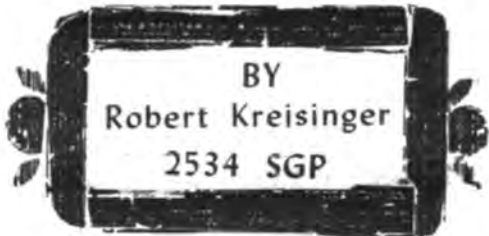
VOLUME 3, NO. 3.

SPARKS - JOURNAL - QUARTERLY

NAA-NSS EDITION - 1980

# WORLD-RENOWN WIRELESS STATIONS

## "N A A" -- ARLINGTON



1913 - February 13th -- Commissioned  
1956 - July 1st -- Decommissioned

This is the story, furnished by member Robert Kreisinger of the "Old NAA Station" at Arlington, Virginia. It is for the most part a reprint of records from the Naval Library in Washington. The photographs were copied from glass plates from the Naval Observatory in Washington and the National Archives. Member Kreisinger has spent considerable time and effort in securing the material and photographs which appear in this article. The Society thanks him on behalf of our members over the world for furnishing this background history of one of the world's most famous wireless stations.

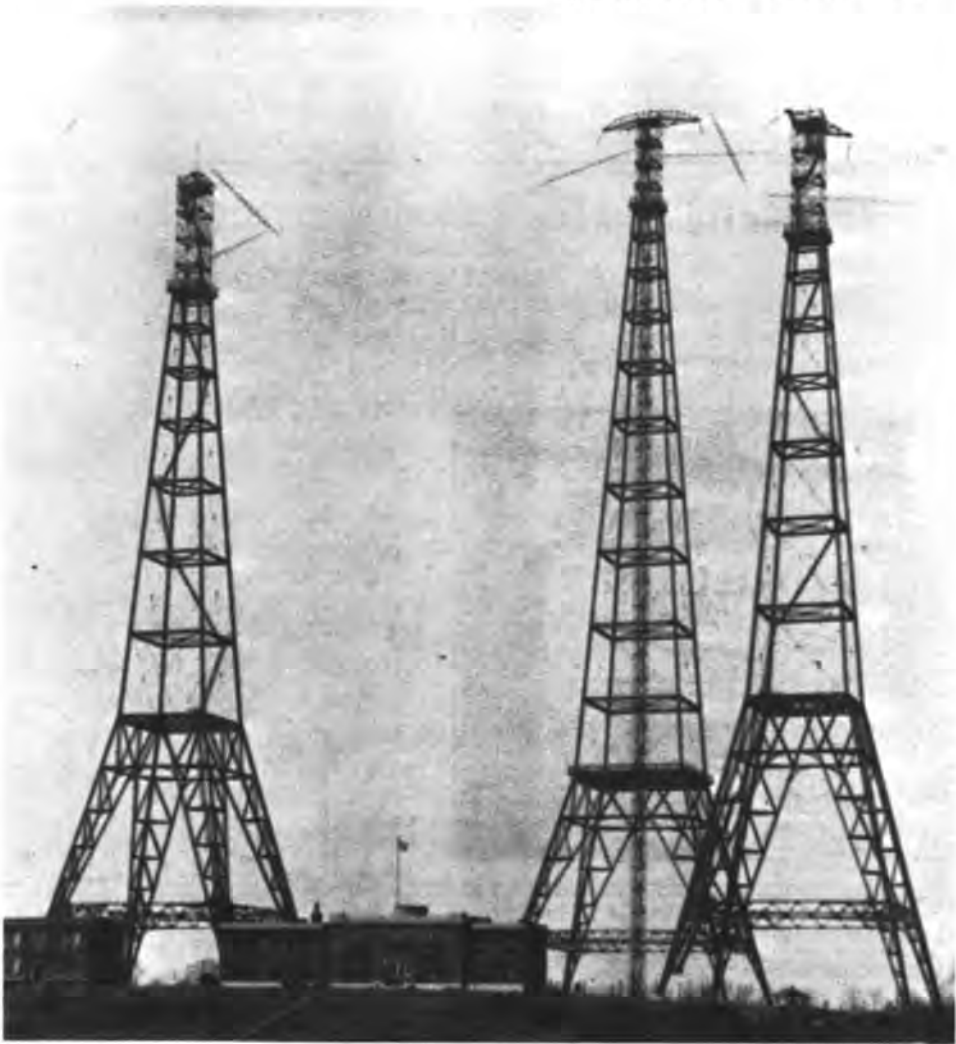
US Naval Radio Station, Arlington, Virginia, generally referred to as "Arlington" or "NAA" was first started in operation on 13 February 1913. It was the first high power radio station constructed by the Navy Department. It was primarily intended to link High Powered Radio Stations, whereby naval ships in the continental limits of the coast could always be reached directly or by relay. After examining many sites around Washington, including Naval Observatory, Soldiers' Home and St. Elizabeth, the ground, 13.4 acres, was transferred from the War to the Navy Department by an act of Congress. Three additional acres of ground were purchased from A.B. Casselman and Wife, Pension Bureau, Washington, D.C., on 9 July, 1917 by the Navy Department at a cost of \$3,000. The property so purchased is located due south of the south tower. The average elevation in the vicinity of the towers is 190 feet above sea level. The distance from the capital is about 4-1/2 miles, WSW direction, latitude 38-52-05 N., longitude 77-04-47 W., this being the west tower, which is 600 feet in height.

## THEY MADE HISTORY

### The Towers of NAA

The three main towers were constructed by the Baltimore Bridge Company, under Contract No. 1532, dated June 30, 1911 at a cost of \$105,541.

( CONTINUED TO PAGE 6)



UNITED STATES WIRELESS STATION AT RADIO, VIRGINIA, HAVING DIRECT COMMUNICATION WITHIN RADIUS OF OVER 3000 MILES -- TALLEST TOWER IS 600 FEET HIGH AND THE OTHER TWO, 450 FEET EACH.  
Photo - U.S. Naval Photographic Center

# Recording the Early History & Development of the Wireless



# Early Days of The Wireless - A Historical Record

## SPARKS JOURNAL



*Society of Wireless Pioneers, Inc.*

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The Badge of a "Pro"



Worn with Honor

THIS NEW PIN IDENTIFIES MEMBERS OF THE SOCIETY OF WIRELESS PIONEERS AROUND THE WORLD. IT IS A BEAUTIFUL AND UNIQUE TYPE OF PIN - CARRYING THE FLAG, SO TO SPEAK, TO IDENTIFY ALL WHO WEAR THEM. HUNDREDS OF OUR MEMBERS HAVE PURCHASED THEM AND NOW WEARING THEM WITH PRIDE AND HONOR. WE ARE INDEED HAPPY TO HAVE THEM AVAILABLE IN OUR "SLOP-CHEST" FOR MEMBERS.

THE PIN (LAPEL) MEASURES 7/81 wide BY 7/16" HIGH WITH MILITARY CLUTCH BACK. THE BACKGROUND IS RICH ROYAL BLUE ENAMEL AND THE FLASH IS BRIGHT YELLOW. THE METAL BORDER WITH METAL LINES AND LETTERING ARE ALL 24-KARAT GOLD PLATED AND THEY ARE ORNATE WITHOUT BEING OUT OF GOOD TASTE.

IDENTIFY YOURSELF TO THE WORLD AS A MEMBER OF THE LARGEST PROFESSIONAL "BRASS-POUNDING" ORGANIZATION THAT EXISTS. BE PROUD OF YOUR MEMBERSHIP IN OUR GREAT SOCIETY.



Maxwell - Hertz - Lodge - Marconi - Tesla - de Forest - Ohm



Recording Wireless History for Posterity

The Sinking of The Lusitania

IN THIS EDITION



MARCONI MEN COOL IN SEA TRAGEDY

In the biggest sea tragedy of the European war, which occurred on May 7 ten miles off Old Head of Kinsale, Ireland, when the steamship Lusitania was torpedoed and sunk by a German submarine, Marconi Operators Leith and McCormick acquitted themselves with credit, remaining on the vessel to send the SOS even as the ship was being drawn down into the waters. The wireless appeal spurred those on land and sea to render aid, the number of saved being estimated at seven hundred and sixty-four. It is estimated that 1,157 persons lost their lives. No definite news regarding the fate of Leith has been received, but it is known that McCormick was rescued.

The Lusitania left New York on May 1, reaching the point where she was destroyed early in the afternoon. The sea was smooth and the vessel, it is estimated by passengers, was proceeding at the rate of about fifteen knots an hour. It was about fifteen minutes after two o'clock when some among the passengers who had finished luncheon went on deck. Their attention was attracted by an object in the water at a distance of approximately 150 yards from the bow of the vessel. At first they believed that it was the tail of a fish. Then they saw that the water was seething around it and some suspected that it might be the periscope of a submarine. Immediately afterward they saw the torpedo start toward the vessel.

Captain W. T. Turner, commander of the Lusitania, was on the bridge. He saw the torpedo and tried to change the course of the vessel. The torpedo kept steadily on, traveling, as it seemed to those who were watching it, at the rate of about five knots an hour. It was fired just as the Lusitania came abreast of the submarine, striking the big vessel under the forward cabins and the bridge. The impact was terrific, the ship quivering and shaking under the blow. A tremendous explosion followed, hurling a great quantity of water and debris into the air.

The Lusitania sank twenty minutes after she had been torpedoed, leaving only a brief time for those who had not been killed by the explosion to seek means of safety. Many persons did not have an opportunity to make an attempt to save their lives, being carried down with the liner when she plunged beneath the waters. Others jumped overboard and met death.

In charge of the wireless were to Marconi men--Robert Leith, the first operator, and David McCormick, his assistant. They sent the SOS call broadcast, the appeal being received by both ship and shore stations. When word of the disaster reached Queenstown, Admiral Coke, in command of the naval station, dispatched all the assistance available to

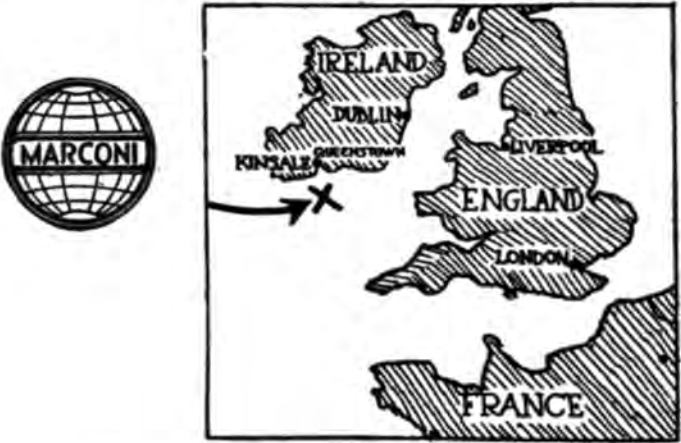
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Click on Index item below

WHERE LUSITANIA WENT DOWN



DATE—MAY 7 1915

CASUALTIES—1198

REMARKS :—WIRELESS SAVED MANY

the scene. Among the vessels which were sent speeding to the rescue were the tugs Warrior, Stormcock and Julia, as well as five trawlers and a lifeboat towed by a tug. These craft effected many rescues, picking up victims of the wreck as they found them in the water or lifeboats.

Oliver P. Barnard, a survivor, told a story which well illustrates the way in which the Marconi operators on the Lusitania acquitted themselves. Barnard made his way to the boat deck after the explosion, climbing up a ladder in order to reach what he thought would be the safest place in the foundering vessel. He encountered the operators in the wireless room and found them coolness personified. He learned from them, he said, that the explosion had put the main wireless set out of commission and that all the electric lights on the ship had been extinguished, leaving the Lusitania's inside compartments in complete darkness.

The vessel was listing heavily to starboard, but Leith and McCormick continued to send the SOS by means of the emergency apparatus. One of the operators took up a kneeling position on the deck, which was listing at an angle of thirty-five degrees, in order to take photographs of the sinking vessel. A sudden lurch of the ship spoiled his plan, however, and Barnard last saw him astride of a chair in which he said that he intended to "sit down and swim."

The British tank steamship Narragansett, bound from Liverpool to Bayonne, N. J., was thirty-four miles from the scene of the wreck when Marconi Operator

( Continued on Page 30 )





BY-

ERSKINE H. BURTON

## A SAGA OF THE GREAT LAKES

Reminiscing over a relatively short career as W/O in my younger days, some interesting experiences come to mind. This career began in 1928 and ended in 1939 at the outbreak of World War II.

I recall aiding in the rescue of the crew of a Great Lakes cargo vessel ship-wrecked on an island in Lake Superior 100 miles northwest of Sault Ste. Marie. During the season of 1929 I was employed as a W/O and deckhand on the tug "James Whalen" VGZD, based in Port Arthur, Ontario. I had been promised a job on a "laker" by the Canadian Marconi Company, and together with two others we arrived in Port Arthur from our home town of Vancouver, to find Thunder Bay still completely ice-bound, no indication of when shipping would open, and no word of any assignments from the Marconi Company.

There was much activity with the harbor tugs, however, which were busy opening channels in the 40 inches of ice blocking the harbor in preparation for towing the loaded grain boats out to open water. The largest of these tugs, the "James Whalen", and the only tug equipped with wireless, needed an operator, who was required to double as deck-hand at a salary of \$125 per month and all found. Rather than wait around for my assignment to a grain boat at \$75 to \$80 per month, I decided to take the job. Since we were on call 'round the clock, it turned out to be a great opportunity to save money, since I rarely got off the ship, even to go up town. Also, at age 19, everything was exciting, and I was kept so busy I had no time to get into trouble.

One day, toward the end of May, a sudden snowstorm swept over the lake. We were ordered to proceed to Keweenaw Point, on the upper peninsula of Michigan, where a large American cargo ship had gone aground. Its crew had managed to get ashore safely. Our task was to tow the salvage barge and equipment to the scene and to see if it were possible to free the ship from the reef. After two weeks' work preparing the ship for the long tow to Duluth by fitting her with pumps to keep her afloat, we were ready for the attempt to pull her free. With the aid of a second tug brought over from Port Arthur, we began to pull. Slowly, with a shattering sound of steel against rock, and with half a dozen large pumps spewing water in all directions from her deck, the ship began to move.

We had been successful in freeing the Ralph Budd from her cradle on the reef, but now our concern was that of keeping her afloat during the 200-mile tow to the head of the lake. Fortunately, all pumps kept working, we reached Duluth uneventfully, and docked our tow in the twin city of Superior, Wisconsin. All pumps were shut down, allowing the ship to rest on the bottom, only the hold filling with water. The following day we returned to our home port.

Our next contact with the wrecked ship was several months later, when we were ordered to proceed to Superior to bring her to Port Arthur, where she was to be dry-docked. The pumps were re-started, and again we had an uneventful tow, followed by putting the ship in drydock. Here she remained until the third week in October, when it was decided to tow her to Collingwood, Ontario, on Georgian Bay, some 500 miles distant, where she was to be repaired.

We set out on the long tow to Georgian Bay around the 23rd of October. A larger, more powerful tug, the "Strathbogie", had been dispatched from Collingwood to take the towline, while our tug was lashed to the port side astern to keep the ship on course. Midway across Lake Superior we received a storm warning, the first of the season. The captain of the Strathbogie decided to head for shelter to wait out the storm. Just in time, we found shelter in a small bay on Michipicotten Island, 100 miles northwest of the Soo. Here we were to remain for a full week, our only neighbors being two fishermen's families living in the harbor. We were comfortable here while the gale raged outside the harbor, but our radio brought the news of tragedy all about. One night I listened as the operator of a car ferry crossing Lake Michigan calmly advised Chicago Radio WGO that they were taking water and in need of assistance. WGO asked him to stand by while the station notified the shipping company. A few minutes later WGO called the car ferry repeatedly, getting no reply. We later read in the paper the news that she had disappeared with no survivors.

As the storm began to abate, we learned from a passing ship that they had sighted a cargo vessel, which was high and dry on the rocks on the opposite side of the island from us--some 10 miles away. This ship, the "CHICAGO", was not equipped with wireless gear. We acknowledged the message and advised that we would attempt to reach the wrecked ship. Early the next morning we set out for the scene, but the sea was still too rough and we returned to shelter. However, the same afternoon we were able to reach the scene, heaving to a mile or so off shore due to the reefs. We were greeted by a formidable sight--the ship was perched on the rocks at an angle of about 45 degrees with its bow high and dry and its stern submerged. Close by we saw smoke and thru' the glasses we saw several men moving around on the shore. We lowered a boat with the intent of going in to their assistance, but the captain decided it would only be carried beyond the island and out to sea, due to the wind direction, and the boat was brought back aboard. We then notified the Coast Guard at the Soo, asking them to dispatch a rescue boat to the scene. On arriving back at Batchawana Harbor we learned that two of the ship's crew had walked across the barren island to where we were sheltered and reported the crew were all in good condition. The following morning the Coast Guard arrived and sent in a lifeboat to rescue the crew.



On completing our tow to Georgian Bay, we were ordered to proceed home. On our way back we were diverted to five different ships which had been either wrecked or frozen in the ice in the Straits, with orders to render any possible assistance. Our last assignment on this trip was to pick up the light-keepers at Isle Royal and Passage Island, 40 miles out from Port Arthur. We limped into port on Christmas Eve, 1929, breaking six inches of ice to get thru'. We had been gone just over two months. On Christmas morning I had to be chopped out of my cabin, the door of which had been frozen shut.

Fresh water sailing on Lake Superior, the largest body of fresh water in the world, in November and December, is a hazardous experience. The year 1929 was the most disastrous season for shipping on the Great Lakes since 1913, when many ships were lost with no survivors. More than 200 lives were lost on the lakes during the 1929 season.





Historical Paper



The Beginnings of Radio

BY—FRED ROSEBURY

A Thumbnail Sketch



Based on the work of Michael Faraday (British scientist and inventor, 1791-1867), H. C. Oersted (Danish, 1777-1851), Lord Kelvin: William Thomson (British, 1824-1907) and others, James Clerk Maxwell (1831-1879), a brilliant British physicist and mathematician, developed his electromagnetic wave theory between 1867 and 1873 in a treatise "ELECTRICITY AND MAGNETISM," one of the most splendid monuments ever raised by the genius of a single individual. In this respect he can be compared with Albert Einstein in our own times.

Maxwell's theory proposed that all forms of light are essentially the same as electricity, that is, they are electromagnetic waves, only differing in the length of the waves and not in the velocity of their propagation. This has since proved to be true, as it is now known with a high degree of accuracy that the speed of light and electric waves are identical.

Heinrich Hertz (1857-1894), a German physicist, demonstrated the actual existence of electric waves in space in 1888. His mathematical theory is the basis of all our practice of wireless, radio, radar, television, etc. Hertz showed that the phenomenon was the effect of rapid electrical oscillations such as the high-voltage discharges of a circuit containing inductance, capacitance and a spark gap. The radiation thus propagated was detected by Hertz with another closely similar circuit in the neighborhood, but not connected with wires in any way to the "transmitter." The effects of this electromagnetic radiation could also be detected in other ways.

William DuBois Duddell (British, 1872-1917) invented the thermogalvanometer, an extremely sensitive device, based on the earlier inventions of Faraday and D'Arsonval, for measuring small high-frequency currents. He did this in connection with his work on the electric arc, and this work led directly to the discovery by Valdemar Poulsen (Danish, 1869-1942) of the "singing arc" which Poulsen demonstrated as a practical radiator, with the proper tuned circuit, could be used for continuous-wave wireless communication.

Alexander Graham Bell (U.S. inventor, 1847-1922) devised the telephone in 1876, but because of this instrument's insensitivity (like the human ear) to high-frequency currents, it could not be used to detect continuous wireless waves. Joseph Henry (U.S. physicist and teacher, 1797-1878) showed that the spark discharge from a circuit containing capacitance and inductance was not a single flash but a series of oscillatory discharges, diminishing or decaying rapidly.

We do not know if Guglielmo Marconi (Italian, 1874-1937) was the originator of the coherer (c.1895). This device was capable of detecting the bursts from a sparking oscillatory system in which direct current was fed through from an interrupter. The interrupter operated at a frequency low enough so that the coherer and a telephone receiver, with their inherently high-inertial mechanical components, could respond to the discharges. This meant that messages sent in the form of dots and dashes could only be received intelligibly if the sending rate was quite slow.

An American scientist, Greenleaf W. Pickard, is generally credited with having found that various metallic-ore crystals: lead sulfide or galena, iron sulfide (pyrites) or fool's gold because of its bright yellow luster, and other materials including metallic silicon, could be used as rectifying or demodulating components to pass through the low-frequency signals carried by the high or radio-frequency electromagnetic waves (the carrier).

Edward G. Acheson (U.S. inventor, 1856-1931) accidentally discovered carborundum (synthetic silicon carbide) while attempting to make synthetic diamonds. This extremely hard substance was found by General H. Dunwoody of the U.S. Army to be useful as a highly stable crystal detector of electromagnetic waves, though not as sensitive as galena or silicon.

With the invention of the two-element "thermionic valve,"—a spinoff from one of Thomas Edison's ideas (the "Edison effect"),—or, as we call it today, the vacuum diode, in 1904 by Sir James A. Fleming (British, 1849-1945), which was the forerunner of the three-element "audion" of Lee A. De Forest (1917), the crystal was put on the shelf to re-emerge brilliantly during World War II as a radar detector because of its small dimensions (inductance and capacitance) which allowed its use as a mixer in micro-wave circuits. The crystal detector was the parent of the modern transistor with its many modifications which have promoted such rapid strides in the state of the electronic art.

It must be fairly obvious that wireless, radio and the art of electronics was not invented by any one person. Many brilliant minds have contributed to it, a large number of whom have not been mentioned here. It may go all the way back to the ancient Greeks who "had a word for it." One of those very words was "elektron" which meant "amber," and the Greeks knew that rubbing a piece of amber with the fur of an animal or a piece of dry woolen cloth, made the amber exhibit very strange properties. . . . And we mustn't forget old Ben Franklin (1706-1790) who almost got himself killed while proving that lightning was electricity. ###



GUGLIELMO MARCONI - AGE 20 (1895)

HERE YOUNG MARCONI IS SHOWN WITH HIS MYSTERIOUS BLACK BOX WHICH CONTAINED HIS FIRST RECEIVING APPARATUS. THE TELEGRAPH SOUNDER ATOP THE BOX WOULD CLOSE A PAIR OF CONTACTS TO RING A BELL EACH TIME A WIRELESS SIGNAL WAS SENT OUT FROM A TRANSMITTER IN THE SAME ROOM. THE SUCCESS OF THESE EARLY DEMONSTRATIONS STARTED THE YOUNG ITALIAN INVENTOR ON THE ROAD TO FAME. PHOTOGRAPH - COURTESY OF MUSEE DES P.T.T. a ROMA.





ROBERT KREISINGER

AUTHOR

## THE ARLINGTON STORY



## The "Magic" Call of Early Day Wireless

(CONTINUED FROM FIRST PAGE)

These towers are of ornamental steel construction, one six hundred and the other two four hundred and fifty feet high. The center of the larger tower is at the apex of an isoscles triangle and the centers of the small towers are at the end of the base of this triangle. The base is 350 feet long, the perpendicular from the center of the base to the apex is 350 feet and the legs about 391 feet. The large tower has a base 150 feet square and each leg of which rests upon and is bolted to a concrete foundation. The small towers have a base 120 feet square with each leg supported as above. These concrete foundations are about 6 feet square at the top and gradually increase in size until at the bottom, 14 feet from the top, they are 12 feet square and each foundation is sunk from 10 to 14 feet into the ground. Each leg of the towers is insulated by means of a large slab of marble and marble washers thoroughly dried and varnished. This slab has been tested up to 150,000 volts. The holes in the marble through which holding down bolts pass are filled with sulphur to further preserve the insulation. At the present time the towers are securely grounded. On top of each tower there are two outriggers each 30 feet in length. There are hand winches on top of each tower for use in handling antennas. Motor driven antenna hoists are installed on the ground at the base of each tower. These were installed by the Ledgerwood Mfg. Co. Contract 1974, dated June 27, 1913 at a cost of \$5,437.50.

The 600-foot tower has an elevator shaft framing and two rung steel ladder stairs with landing platforms at 15-foot intervals. It has a weather vane, three electric panel cabinets and a conduit lamp post at the top with electric cable to the ground. The 450-foot towers have steel stairs with landing platforms at various intervals. The north legs of the north tower are at a level 20 feet lower than the other legs. The 450 and 600 foot towers weigh about 275 and 442.5 tons respectively.

In 1922 two new towers were erected east of the station; one about two hundred feet east of the south tower and the other about eight hundred feet east of the north tower. They are steel skeleton construction, self supporting, 190 and 200 feet high respectively and were completed about September 1922. These towers are 34 feet on a side at the base, one tapers to 2 feet at the top and the other with a similar taper, has had ten feet of the top removed. Each of these towers has a single rung steel ladder.

During 1926, four (4) mast, forty (40) foot high were erected on the roof of the wireless buildings to support the high frequency antennas. These masts are of 4" galvanized steel pipe, set in concrete and supported by guide-wires insulated every ten feet.

### Buildings and Grounds

The grading, etc., for the foundation of the wireless buildings was done by R.J. Beall Construction Co., Contract No. 1864, dated June 28, 1912 at a cost of \$5,420.20.

The wireless buildings were constructed by Arthur Cowsill, Contract No. 1521, dated June 29, 1911 at a cost of \$68,883.

The wireless buildings consist of a transmitter building, a receiving building, and a small well house, the first two of which are connected by a covered passageway.

All buildings are built of tapestry brick and the main buildings are furnished off with cornices of buff terra cotta, which was later covered with sheet metal and painted buff color. The roofs of the buildings are of concrete and tiling with five layers of three ply tarred paper, topped with a thick coat of tarred slag for water proofing. These roofs are supported by very heavy "I" beams, and the roof of the transmitter building is made stronger to support a cypress water tank having a capacity of 10,000 gallons.

The well house has an ordinary sloping roof of wood and tin. This house contains a motor driven well pump of a capacity of ten gallons per minute, which pumps water from a well 155 feet deep to the water tank above mentioned. This well supplied sufficient water for the station until 1916, at which time the Bureau of Engineering was requested to plan to connect this station with the water supply at Fort Meyer Military Reservation. This connection was completed in the fall of 1916.

The Administration Building was constructed by W.E. Mooney, Specification No. 2141, dated July 30, 1915 at a cost of \$16,966. This building is built of tapestry brick and furnished off with buff terra cotta cornices. It contained ten office rooms, a coal storage room, furnace room, two storage rooms for old correspondence and a garage. This building was recently converted into quarters for the Officer in Charge, on the first floor and the second floor was converted into quarters for two Chief Petty Officers.

The Septic Tanks were constructed under Contract No. 1521. The tanks have a concrete foundation, reinforced concrete side walls, and reinforced concrete roof. These tanks are connected with all the buildings at this station.

The reservation fence and gates were constructed by L.M. Johnson, Contract No. 1982, dated June 27, 1913, at a cost of \$2,206.41.

The reservation roads and walks, etc., were constructed by B.M. Smith, Contract No. 2230, dated June 12, 1916, at a cost of \$1,129.50.

### Original Installation

The original installation consisted of a 100 K.W. spark set constructed on the Fessenden system. The main driving unit was a Westinghouse 200 H.P., 220 volt, 25 cycle, 3 phase, Synchronous motor, 300 revolutions per minute. The 100 K.W. (General Electric Co.) 500 cycle, belt driven, 1250 revolu-



THE OSC. TRANS. TO THE LOWER LEFT OF THE PRINT APPEARS TO BE THE 5 KW SPARK TRANSMITTER. IT IS SIMILAR TO THE NAVY STANDARD 2 KW TRANSMITTER USED IN WW-1. THE WHEEL FOR CHANGING WAVE AND THE LEVER FOR ADJUSTING THE COUPLING CAN ALSO BE NOTED.



tions per minute, generator had the revolving portion of the Synchronous rotary gap. The condensers were of the compressed air type, the antenna consisted of three flat top sections stretched between the three large towers, 23 wires to a section, individual wires were 7 strands of 0.032" diameter (#20) phosphor bronze, spreaders of each section being 88 feet long. The two west ends of flat tops were open at the 600 foot tower, the sections between north and south towers were connected by jumpers to the other flat tops, the lead down to the transmitter was a fan shape down 300 feet, then all wires were bunched for entering the building. This antenna appangement had a fundamental of 2100 meters (142.9 KCs) with a capacity of 0.0094 M.F. It was provided with a switch to be used as a transmitting or receiving antenna. The second set installed was a small 5 K.W. transmitter with antenna 300 feet high. This set was for communicating with Philadelphia, New York, Norfolk and for local radio work. The third set was a 100 K.W. Federal Telephone Co. arc set. The power unit consisted of a General Electric Co., 500 volts, 100 K.W. D.C., the two units direct connected.



THE FAMOUS "VOICE OF ARLINGTON" ... THE 100 KW TRANSMITTER. REMOVED FROM SERVICE IN 1925.

During 1924 and 1925 the 100 K.W. spark and arc sets, also the 5 K.W. spark set, were removed from the station and five vacuum tube transmitters were installed by Navy personnel. During 1926 four (4) High Frequency 10 K.W. sets were under construction at U.S. Naval Research Laboratory, Bellevue, D.C., for this station. The first set was delivered early in the year 1927. Much experimental work was done during the year and the last set was delivered and installed December 1, 1927. One 250 watt High Frequency set was installed at this station on April 15, 1927. The present installation consists of one 20, one 10, one 1-1/2 and one 1 K.W. vacuum tube transmitters, also four 10 K.W. and one 250 watt High Frequency transmitters.

The 1000 watt broadcast radio telephone formerly at this station was removed during December 1926 and installed at the Navy Yard, Washington, D.C.

During the twelve months ending June 30, 1915 arlington handled 78,921 messages. This station has been used for important experimental work along with the development of the Radio Art, including long distance radio telephone tests in 1915 and later electron vacuum tube transmitters.

### TFK

A study of traffic handled by the Navy Department for a month in the early part of 1926 shows that the 20 and 10 K.W. transmitters alone cleared 367,000 words and as an equal amount or more were received, one month's work in 1926 amounted to almost as much as one year's work in 1915, besides longer distances were obtained and work handled more expeditiously.

The record of words transmitted and received by the Navy Department for twelve months ending December 1927 totaled 8,760,000, 60% of which were transmitted. This consisted of official messages, weather and hydrographic information and press news 80% of all messages originating in the Navy Department were handled through the Arlington Station.

The records of words transmitted by the War Department for twelve months ending December 1927 totaled 3,260,340. This consisted of official messages and weather information. 100% of all messages originating in the War Department was handled through the Arlington Station.

### Inspections at NAA

Since January 1, 1925 the following inspections were held at this station:

One June 30, 1925 by Commander R.T.S. Lowell, U.S.N., who graded operations, personnel and material as excellent and made following remarks as a summary of work accomplished in two months previous to inspection:

- "(a) Installed a 1-1/2 K.W. C.W. tube transmitted for the Army replacing the 500 watt A.C. tube transmitter previously handling this traffic.
- (b) Conversion of the 6 K.W. C.W. tube transmitter to 10 K.W. output on same wavelength.
- (c) Installation of 500 watt broadcast transmitter.
- (d) Installation of 20 K.W. C.W. master oscillator coupled circuit tube transmitter - 95% complete, and now undergoing test.

All installation but the 20 K.W. was performed by the station force. In addition, the station force has also constructed a new 350 foot antenna for the 1-1/2 K.W. transmitter and a 70 foot antenna for the broadcast set. The station force further removed the General Electric 500 watt TD transmitter and the old broadcast set. All of the work performed has been of the highest order and has been done absolutely without any interruption of traffic."

One December 13, 1925 by Lieutenant W. Klaus, U.S.N., who graded operations, personnel and material excellent and made following remarks:

"When the 20 K.W. tube transmitter was completed it was found that the existing main antenna was too small to take the full output of the set. The station force, assisted by the Navy Yard, remodeled the antenna by the addition of wires in the top and replacing the rat tail with a cage lead in. This permitted operation of the set at around 25 K.W. output. When the set was pushed to full output corona occurred at the free end of the antenna attached to the west tower.

The condition of all the transmitters is excellent. Amount of stores and replacement parts on hand not considered sufficient but are limited by the insufficient maintenance allowance of a station with the number and power of first-class transmitters such as at Arlington.

The cleanliness and preservation of the station and material as a whole are excellent."

### Picture Credit

The pictures used in this article are official U.S. Navy pictures furnished by courtesy of the U.S. Naval Observatory and made from their original glass plates. Thanks to Member Kreisinger for his time and effort taken to obtain these early-day pictures for the Society's use. They present a truly remarkable glimpse into the past and our early heritage.



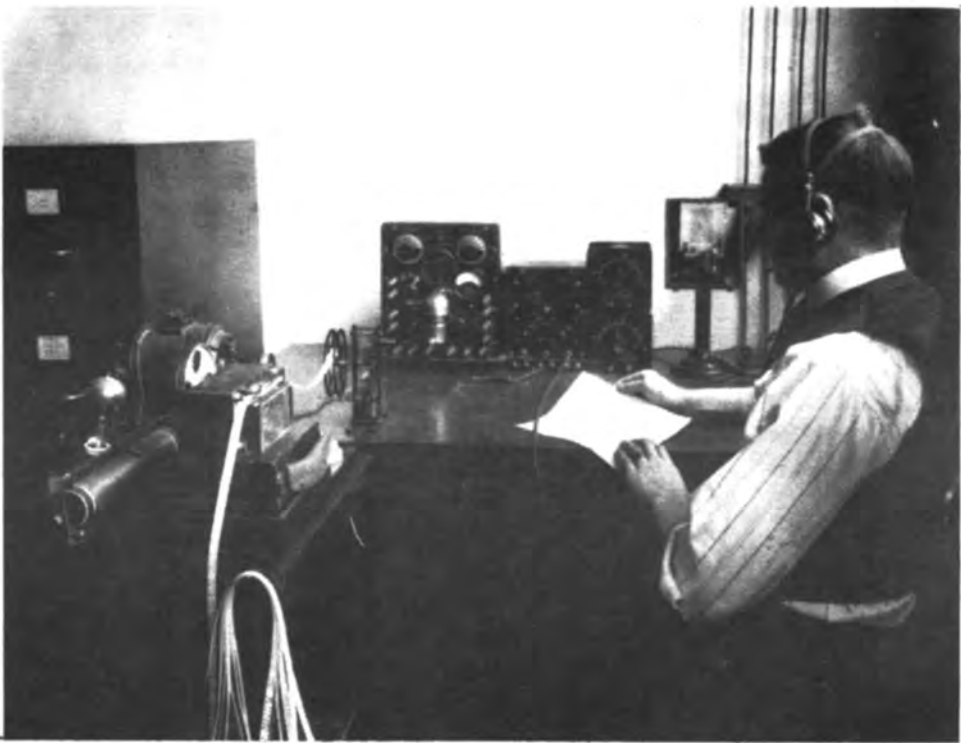


# EARLY DAY PICTURES - NAA & NSS

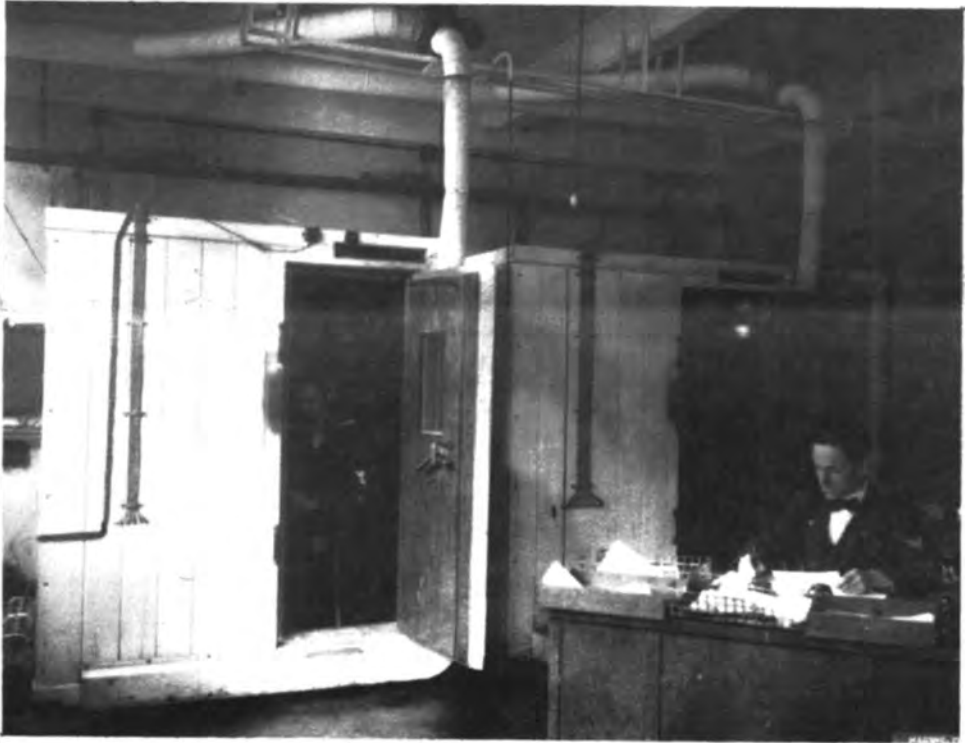
## Receivers & Operations



OLD NAA - RECEIVING ROOM, JULY 1913



OLD NAA - QST DE NAA ... PRESS ...PRESS ...

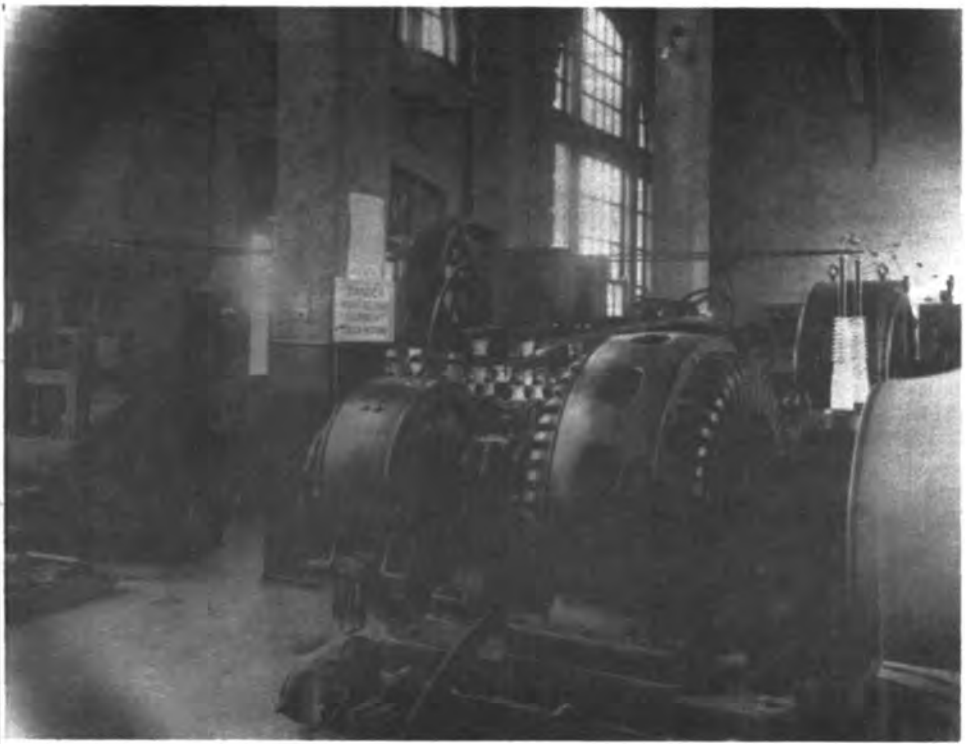


OLD NAA \_ SOUND PROOF RECEIVING BOOTHS

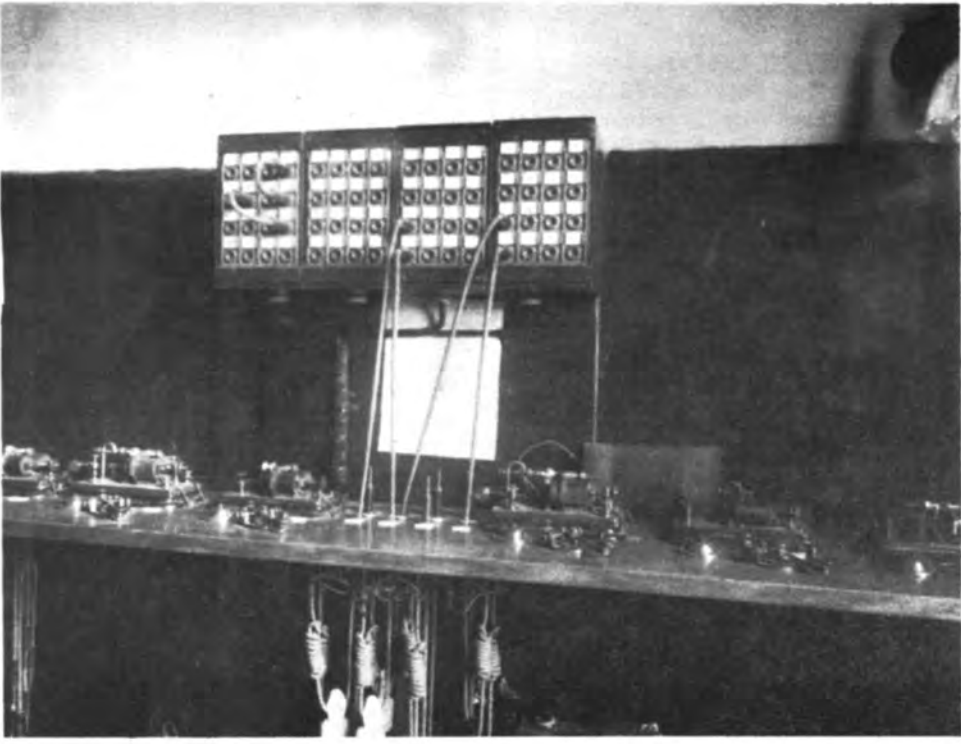


OLD NAA \_ "ON DUTY"

## Control & Equipment



OLD NAA \_ ENGINE GENERATOR AND EQUIPMENT ROOM.

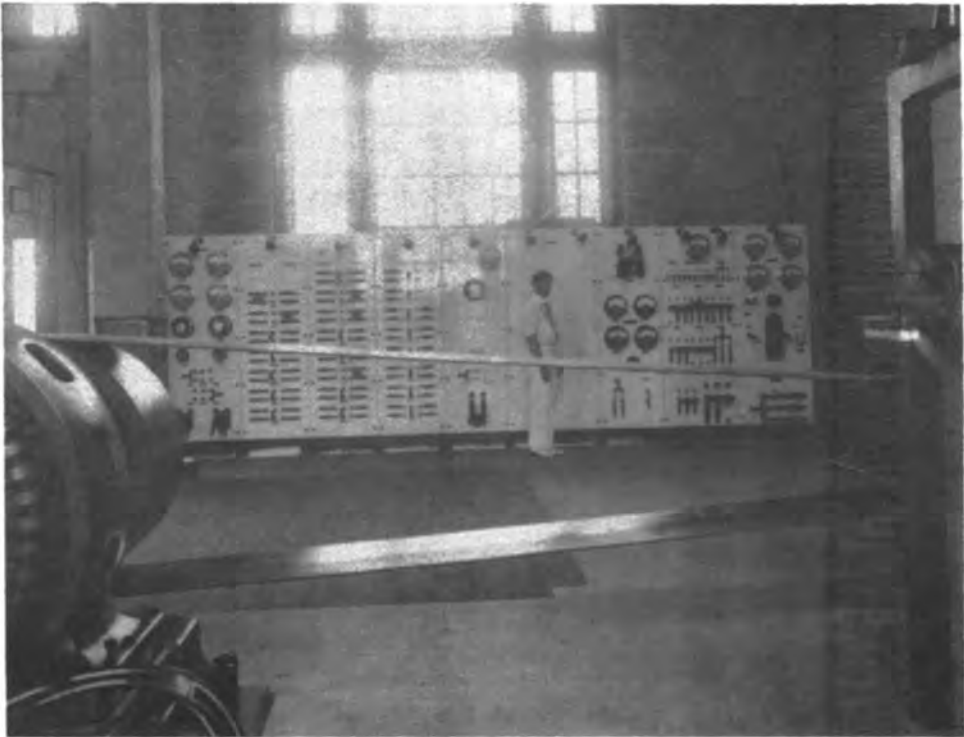


OLD NAA - CONTROL PATCH PANEL RACK

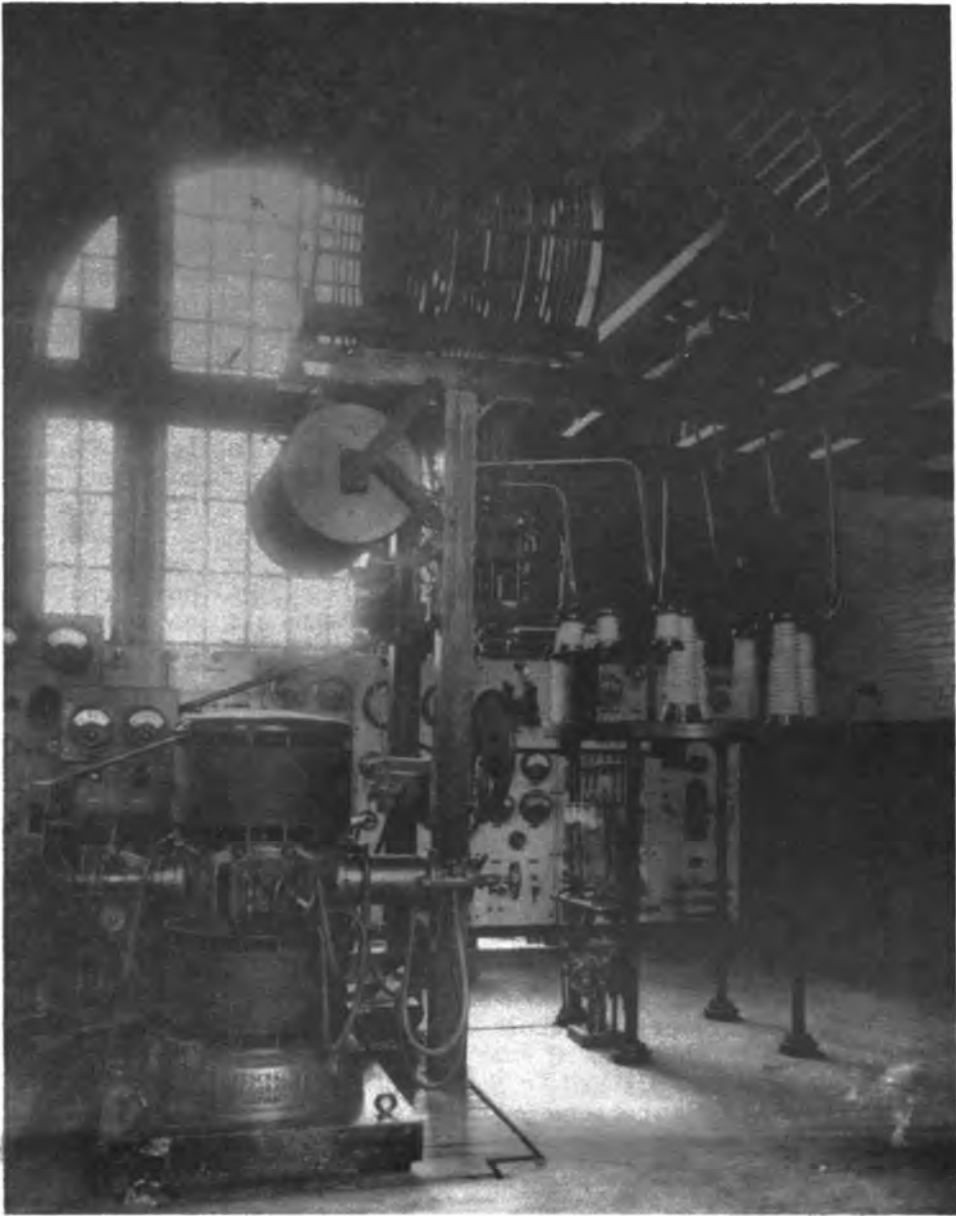


# OLD NAA

## Transmitters



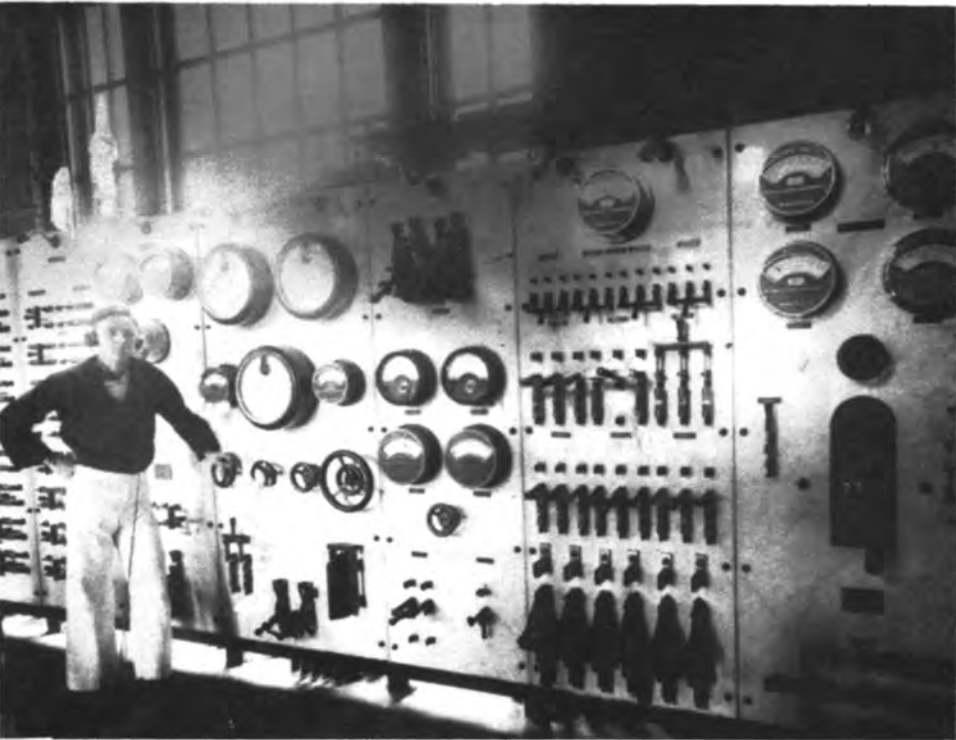
OLD NAA -- SWITCHBOARD AND CONTROL OF THE STATION  
(JULY 1913)



OLD NAA --- 30 KW POULSON ARC INSTALLED BY THE FEDERAL  
IN LATE 1912



OLD NAA - CLOSE UP OF THE SYNCHRONOUS ROTARY GAP OF  
THE 100 KW SPARK TRANSMITTER FURNISHED THE NAVY BY  
FESSENDEN



OLD NAA - MAIN CONTROL PANEL - TRANSMITTERS





# My Assignment at Arlington Circa 1922

As Related by John A. Blackman

Dear Bill:

I believe that you wanted a brief resume of my radio experience while assigned NSS-NAA, so here it is:

My Dad was a telegrapher for the Missouri Pacific RR, so I learned Morse at an early age but, of course, was not proficient at it. I joined the U.S. Navy in January 1919 and was assigned to the USS UTAH (Battleship-now at the bottom of Pearl Harbor) and I was assigned to the Radio Shack - I stayed on the UTAH for 19 months - My job was mainly copying NSS Press and maneuvering the Atlantic Fleet when we were at sea. From the UTAH I went to a mine-sweeper and from there to NSS and NAA at radio central in Washington - At NSS we had circuits all over the world and used a 1,000,000 watt Arc transmitter located at Annapolis, MD, but controlled by radio central - We also controlled NAA which was a 100 KW spark transmitter at Arlington, VA - We also had wire circuits to Bar Harbor Maine and when static was too severe on our frequency (17,000 Meters) we would take the traffic from Bar Harbor where the static conditions were not usually bad.

The Ten PM Weather and press we sent from NSS was hand sending and we rarely made a sending error - we were all good operators as we spent eight hours per day doing nothing but handling traffic - My roommate (Edward Adler-now dead) won the world's championship speed receiving about 1921 - speed was then (1921) 58 WPM without visual help.

I spent a few months of the five years that I was at Radio Central over at Arlington (NAA) where we built 21 tube transmitters to replace the 100 KW Spark transmitter. (I have a picture of the transmitter men at Arlington taken about 1922 which I am going to send you for your files.)

One interesting thing - I was handling traffic to Guam (NPN) with the Arc (1,000,000 Watts and 17,000 Meters) and receiving conditions were very difficult so I was sending priority traffic words three times with 250 Amps in the antenna over at Annapolis. We were not allowed to put over 250 Amps in the antenna without the communications watch officers approval, so I went

in to see him and he authorized increasing power 50 amps at a time until I could clear the traffic - I did this 50 amps at a time into the antenna until Guam could copy words twice until we had 500 amps in the antenna over in Annapolis and we cleared the priority traffic, but when we had it cleared Annapolis Land-wired me that they had burned a bark down about a mile away - the tin roof was bonded but evidently one of the grounds had broken loose.

I am sure that we in the Society of Pioneer Wireless have many things to reminiscence over - Am 79 years old now and wonder if I ever told the NPN operator that we had burned a barn down - probably not as it was too very difficult to get every word through that awful static on that frequency - (It would roll in like ocean waves). Be funny if he read of it fifty years later in a Wireless Pioneer's bulletin.

After leaving the Navy in 1929, I went to South America as a radio flight operator on the New York, Rio, Buenos Aires line. From there I returned to the states and started working for TWA at LA, was transferred to Mid-Continent Airlines at Wichita Falls, Texas and was transferred after about eight months to Western Air Express in Denver, Colorado, and also later at KC and Indianapolis. Came as Radio Engineer to AM station WAGF in 1933 and am still with them, but had a break of 5½ years during WW 2 when I was a radio code instructor for the Naval Training at Pensacola.

Am sure that most of the old timers over the whole world has copied my fist (Sine JB) during those days and perhaps through SOWP might possibly hear from some after 50 years but of course, many are passed on by now.

Will send a picture of the radio gang on the USS UTAH in 1919 for your files and would like to hear from any of them.

Also will send a picture of a few of the top operators at NSS about 1922 on the roof of the receiving station at NSS.

Fraternally and 73,

John A. Blackman, 833-SGP  
AiK4



PICTURE TRANSMITTER MEN AT ARLINGTON-TAKEN IN 1922 FURNISHED BY MEMBER JOHN A. BLACKMAN 833-P. IDENTITY OF THOSE IN PICTURE, FURNISHED BY MR. BLACKMAN AS FOLLOWS: (L/R)

STANDING  
GUNNER MCKAY (CO), WALSH, FOUNTAIN, CHIEF BURNS, HOLT, WILCOX, ROBINSON, ADLER, BARTOS AND WEBSTER.

FRONT ROW  
YORK, 'LITTLE' MILLER, VAN DEVEER, JOHN BLACKMAN, 'BIG MILLER' & MCDUGAL.





# THE "WVY" HOT-SHOTS

By Donald T. Wright



WVY - AUTOMATIC ROOM - WAR-WVY CIRCUIT 1932.  
PHOTOS FURNISHED BY DON WRIGHT.

By 1932 the great economic depression had taken a firm grip on the country and found myself on the beach with no prospect of finding a berth. To continue both eating and radio operating, I joined the Army Signal Corps. Enlisted at Vancouver Barracks, Washington and from there was sent by steamship to San Francisco on the aged S.S. Rose City "WWR". The Ninth Corps Area Radio Station, WVY, at the Presidio of San Francisco was big, "employing," around fifty operators.

There were three sections: wire-telegraph and Morse men; manual radio positions and operators to pass traffic with the outlying forts such as Vancouver Barracks, Fort Missoula, Fort MacArthur and some other forts in Utah and Arizona, the names of which I have forgotten. This net was unofficially called the "Outlaws". Sometimes they kept their skeds with WVY, many times they did not, hence the name. Two automatic circuits made up the third sections although I use the term "automatic" loosely. The WVY-WTA (Manila) circuit was a sometimes automatic operation. Auto when conditions were good and manual when these two stations could barely hear each other.

The WVY-WAR (Washington, D.C.) circuit was where the Hot Shot operators congregated. They had a separate room from rest of the station. Oh, it wasn't the enlisted men radio operators such as myself that decided on what net they operated. It was Warrent Officer Davis that determined the assignment and his orders were carried out by Master Sergeant Moody, the CHOP. As mentioned, the Washington circuit was manned by high-speed ops. There were about a dozen of these Hot Shot men counting all three shifts. The operating at that time was hardly automatic, though. Boehme Heads and Kleinschmidt perforators were used in sending but receiving was done at a speed between 40 to 50 wpm. The brass wanted full auto operation at a speed of at least 100 wpm, but every attempt to obtain such failed. They tried wax cylinder recording at 100 wpm, playing back to the Hot Shots at the highest rate of speed they could copy, but of course that was far less than 100. Next they tried taped ink recording with the tape passing along in a brass channel across the front of an operator's mill. Not much gain with this method either. There seemed to be no combination that would produce a higher net handling speed than the manual copying speed of the Hot Shots. So for a while man contested machine and proved superior.

It soon became evident that I was not "hot shot" material so was relegated to the WVY-WTA circuit to slug it out at a maximum speed of 25 wpm using a straight key. Sometimes, conditions would improve and then the Manila op who had been a WVY Hot Shot before they exiled him to the Philippines would pour it on me to "QRQ" to high manual speed, but I just couldn't step it up much without making frequent errors. He would send, "get off" or failing to get me to give would send, "get CHOP", and demand Sgt Moody to get him an operator, meaning put one of the Hot Shots on but Moody hated this particular operator's guts and always told him none were available, so then I would resume sending at 25 wpm while there was much fuming and frustration at the other end. Couldn't blame him, really. Some of the messages carried a check of over a thousand words, and there he was sweating it out in the tropics without air-conditioning in his station. We didn't need air-conditioning being located near the Golden Gate Bridge where the cool ocean breezes kept the air temperature at a comfortable level.

A word about the pay radio operators received in those days. On the tug-boats it was \$80 per month. On the San Pedro I received \$125 but then it was a combination job of radio operator and freight clerk. As a Private in the Signal Corps, it was \$21 until FDR put into effect a depression combatting measure reducing the salaries of government employees including that of soldiers by 15%, thus my income receded to \$17.85 per month.

In San Francisco that wasn't so bad. Board and room were free and I enjoyed the barracks sociability. Street-car fare was a nickel and one could ride all over San Francisco on one fare by using transfers. Coffee and donuts were a nickel (if you were out on the town) and movies at the Presidio YMCA were 12 admittances for \$1.25, but I could usually pick up one of these tickets for 50¢ three days following payday when the gamblers in the day-room were broke. Another fringe benefit: when off duty, I could walk out to old Fort Point in the Presidio and watch, close up, construction of the Golden Gate Bridge. Watched this project from the earliest beginning to completion of this magnificent structure.



WVY - 1932, MANUAL POSITIONS. SGT. MOODY IN FRONT. CAPTAIN WOOLVERTON IN BACK. DON WRIGHT NOT IN THIS PICTURE.





## "Les" Funston "Tells All" to Fred Rosebury about his unpatented Invention for First Time

## The Electronic "Death-Ray"

Long ago a caveman found a hollow log and a stick. The log floated on water - and thus was born water transportation. The caveman paddled around his small area and discovered rats. For some reason the rats were very fond of his ship.

Chris Columbus, in the natural course of events, had rats on his ship too. Some people thought Chris also had bats in his belfry. Even the swashbuckling bloodthirsty pirates of the Spanish main were plagued by rats on their ships.

And even today, thousands of these nasty and ever-hungry rodents infest the wharfs, the docks and the piers of every seaport in the world. When the big luxury liners tie up at the docks, rat-guards are immediately placed on the mooring lines; every seafaring man has seen these rat-guards: they are large metal discs that are placed around the lines to keep the rats from coming aboard via these lines. But while the rat-guards were effective on the lines, the varmints lurking in the neighborhood (and perhaps for miles around) just waited until the gangway was in place, upon which it became a freeway for the whole rat population. For some reason, the rats preferred ship chow to that available anywhere else.

A long, long time ago I was a dashing third class key-pusher for the U. S. Navy, stationed on a "tin-can." For you iggurunt guys, a tin-can is a polite name for a destroyer.

The vessel was anchored out in the stream, so we didn't have any foreign rats on board; the ones we had were members of the crew. One morning we got orders to proceed to San Francisco and to tie up at one of the local piers: something about Armed Forces Day, and visitors. That was okay with me because every man of the sea knows "Frisco" as a good liberty port. I always had a good time in Frisco: there was that cute little blonde waitress at one of the quick-lunch joints on lower Market Street. She was the . . . well, that's another story!

We steamed out past Point Loma, headed for the Golden Gate with a song in our hearts . . .

Before arrival in port, all hands turned to, painting and cleaning and polishing so that the visitors would be impressed.

Once before, on another ship, I had been in Frisco for Armed Forces Day. As I remember, we didn't have any visitors to our ship on that occasion. It seems as though we were tied up next to the main sewer pipe from the city. Yes, we did have rats at that time. We tried everything to exterminate them. The OOD had his hands full of rocks to throw at them, but he never hit one. I think he couldn't hit a male cow in the stern-sheets with a fly-swatter.

A hotshot ensign stood his OOD watch armed with a broom. I must say, he didn't look much like a real fighting Navy officer, parading to and fro with that darn broom. . . .

We were approaching San Francisco. The deck crew had the gangway out and were painting it and tightening up the bolts. I was contemplating that gangway and thinking: if the rats came aboard that way, then a simple solution would be to keep the varmints off! Such a simple solution to an old, old problem!

I worked out my plan of action. An electronic rat killer which would be known as the Mark 3 - 4523KLXS - Model 1, code name "killer." That made it legal navalese, pursuant to strict Navy regulations; you see, everything must have a serial number and a model number. When nobody was looking I tacked six little metal strips on the gangway. The strips were spaced about a quarter-inch apart, and every other strip was hooked up with a piece of wire. This is the way I had it all doped out: as the rat would run up the gangway, his hind feet would be on one metal strip, and when his front feet hit the other strip----WHAMMO!! No more rat!! I would thus electrocute the critter. Nobody noticed my metal strips on the gangway. I had concealed the wires.

We arrived in San Francisco, and the gangway was put in place. I ran my wires into the radio room. The two wires were connected to the secondary of a spare power transformer rated at 900 volts a.c. output. The primary was hooked to the 110-volt a.c. line on the ship. I hid my invention in the waste-basket which was a safe enough place because nobody ever emptied wastebaskets. My work was finished; in five minutes I had my dress blues on and was headed hot-to-trot into the big city: hot to trot and loaded for bear!

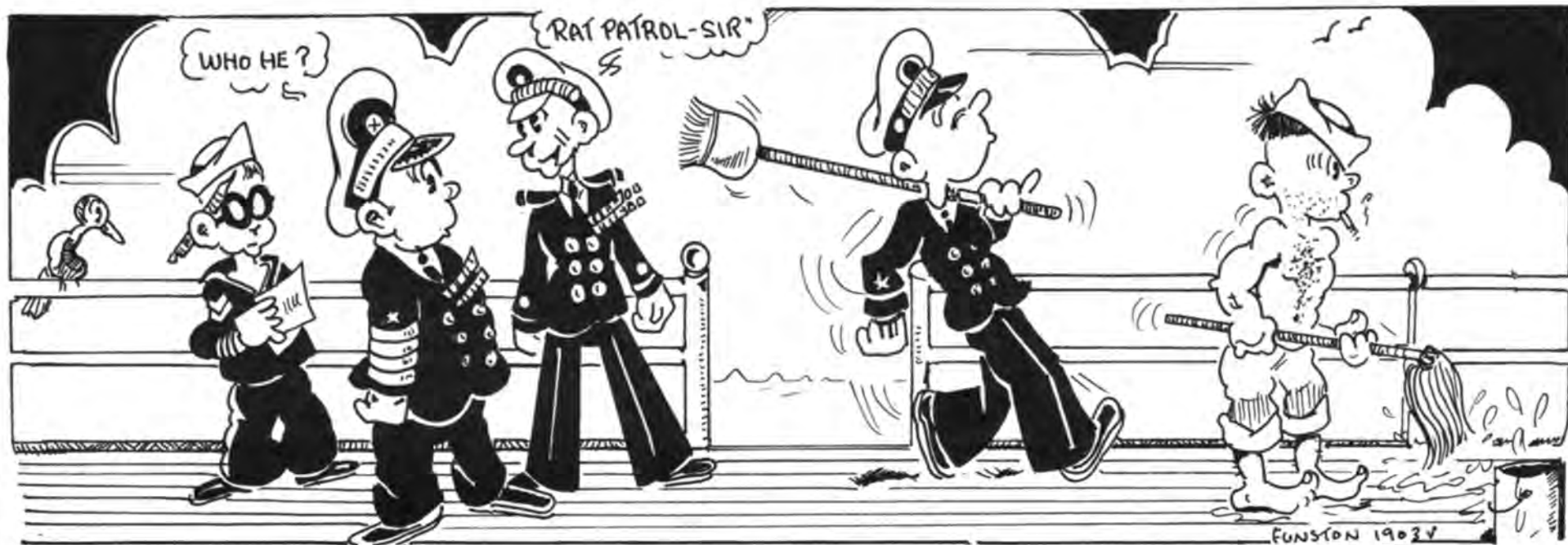
I got loaded all right, and forgot about the bear; in other words I had a good time. But like Cinderella, I had to be back on the ship at midnight. After a fast taxi ride I made it with just four minutes to spare.

I went up to the radio shack to see if anyone had missed me and to see if anything important had happened. The guy on watch told me I had missed some excitement; he said he heard bells ringing and people rushing around and hollering. He didn't know exactly what had happened but there had been, he said, a lot of commotion. . . .

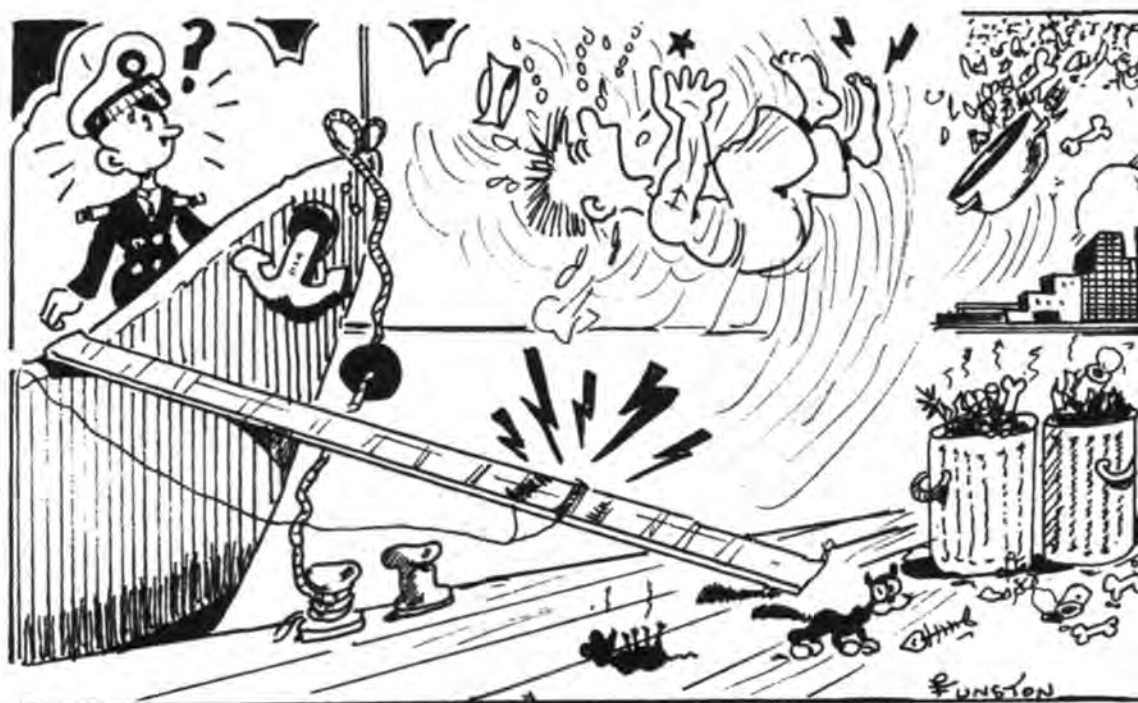
I began to suspect something had gone wrong. I went on deck to pass the time of day with the OOD, during which, just casual-like, I asked him what was new. And this is what he told me:

"I had the evening OOD watch," he said. "The mess cooks had just finished up with the evening meal and were swabbing out the galley."

"Then one of the mess cooks came on deck with a big dishpan full of garbage. He was barefoot. I gave him permission to take the slops over to a big can on the dock. Starting down the gangway, all at once I heard the most ungawdly screech!







## A Historic Scoop

"It was the mess cook, and with that screech he had jumped about five feet in the air, throwing the dishpan of garbage about twenty feet! Man, oh man! There were potato peels, eggshells, wet coffee grounds and sundry other unidentifiable material all over the quarterdeck and the dock. What a mess!

"The man was lying on the dock, screaming like a wounded Indian. He kept hollering that he was dead—struck by lightning for his sins, and he was at the pearly gates or something!

"I immediately called the medics who went out on to the dock to examine the patient who was still yelling bloody murder, and they brought him back on board.

"They told me there was nothing at all wrong with him; probably he had battle fatigue, they said, from watching too many war movies.

"Well, that's the way it happened," the OOD concluded, "but I don't really know what caused all the rumpus; but something kinda funny happened a little later. There was a big rat sneaking up the gangway—and the same thing happened. That rat screeched—and expired right there on the gangway! It's kinda strange..... Good night."

I said good night to the duty officer and went to the shack. Then I quietly dropped my invention over the side and turned in.

To this day, nobody knows just what happened. I do, but I ain't talking!!!

##

## ODE TO N A A

In an old and rusty freighter  
On the broad Atlantic's face,  
Bumping slowly o'er the billows  
At about a nine-knot pace,  
While the chipping hammers thundered  
And the sailors cursed the grub;  
Sparks lay in his bunk and slumbered--  
Dreamt of quite another tub.

In a vision quite entrancing,  
While the roaches held a race  
Up and down his spinal column,  
Sparks lost track of time and space.  
In his vision he was sitting  
In a radio room de luxe;  
With the latest tube transmitter,  
Storage batteries for juice.

When he pressed the key the ether  
Fluttered with his I. C. wave,  
And his pile of QSR blanks  
Made the other fellows rave;  
While the notices they gave him  
In the monthly "Wireless Age"  
Made his hair curl up in ringlets  
As he read the flowery page.

Came a tapping at the portal  
And a voice both loud and thick,  
"Damn that guy, he's always sleeping,  
Hustle, Sparks, get us the tick."  
Roused thus rudely from his dreaming  
Sparks turned on his O1A,  
Cranked his 106-D tuner,  
Got the last "--Naa."

From the Wireless Age  
Submitted by Jack Robinson



## SHIPS & DAMES



We always call a ship a she  
And not without a reason  
For she always displays a well shaped knee  
Regardless of the season.  
She scorns the man whose heart is faint  
And doesn't show him pity  
And like a gal she needs the paint  
To keep her looking pretty.

For a love she'll brave the ocean vast  
Be she gig or cruiser  
But if you fail to tie her fast  
You're almost bound to lose her.  
She's happiest beneath the stars  
A time for speculation  
And has a hatred for all bars  
Just like a Carrie Nation.

On ships and dames we pin our hopes  
We fondle them and dandle them  
And every man must know his ropes  
Or else he cannot handle them.  
Be firm with her and she'll behave  
When the skies are dark above you  
And let her take a water wave  
And praise her and she'll love you.

That's why a ship must have a Mate  
She needs a good provider  
A good strong arm to keep her straight  
To comfort her and guide her.  
For such she'll brave the roughest gales  
And angry seas that crowd her  
And in a brand new set of sails  
No dame looks any prouder.

The ship is like a dame at that  
She's feminine and swanky  
You'll find the ones that're broad and fat  
Are never mean and cranky.  
Yes ships are lady-like indeed  
For take them all together  
The ones that show a lot of speed  
Can't stand the roughest weather.

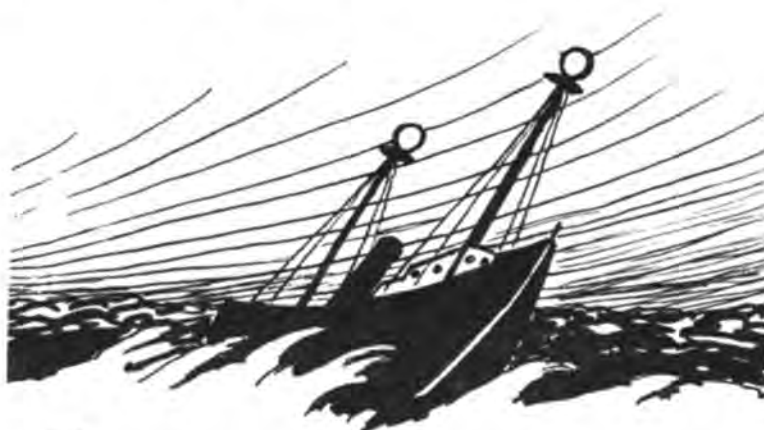
...Anon.

(From collections of Jim Webster. 2062-P)



# Recording Wireless History for Posterity

## GREAT COMMUNICATIONS SYSTEMS OF THE WORLD



Edited by Fred Rosebury

By Eric Walter, Director Swiss Chapter

CQ DE HEB QRX CG 8 12 16 AND 22 K

## THE SWISS MERCHANT FLEET AND THEIR COMMUNICATIONS TO SWITZERLAND

### THE WIRELESS PIONEERS

Never heard will probably those say who navigated at sea before the year 1940. That the "bible" and other UIT-publications came from Switzerland were supposed probably incidentally.

How it comes, that Switzerland as a inland country holds its own high-sea fleet?

Therefore one has to turn one's thoughts back to the beginning of the second world-war. Owing to the difficult situation of supplying vital goods to Switzerland, the Swiss Federal Government decided on 28th of February 1941 to initiate the Swiss flag on the high-seas. Up to this date the transports were carried out by chartered ships under Panamenian and Greek flag.

The 24th of April 1941 became a historical date for the Swiss fleet. For the first time was hoisted on this date the Swiss flag (white cross in red field) on the steamer CALANDA which was owned by the SCHWEIZERISCHE REEDEREI AG at Basel. The home port for all Swiss ships is Basel. However this port is situated about 1000 kilometers from Rotterdam/Holland on the river Rhein upwards were Switzerland, France and Germany adjoin. Of course, Basel can not be reached by high-sea ships. This port is served by inland-shipping.

Since the war-time the fleet under Swiss flag has grown to about 30 ships and the older ones are currently be replaced by new-buildings. The smallest ship has about 1600 dwt, the biggest one about 55000 dwt. Swiss ships you can meet today on all the seven seas. The crew's consist of about half Swiss and half Foreigners.

Switzerland has no own Navigation schools. Candidates for a License in Navigation or Engineering have to graduate at a foreign school as in England, Germany, France etc. The training for Radio-Officers had also occurred at foreign schools. But since 1960 it is now possible to get certificate-maturity on a night-school at Bern. The final examination then has to be passed by the Swiss PTT.

Thats a short summary concerning ships and their crews under Swiss flag.

How does it look now with the Radio-Equipment onboard this ships? In contrast to some foreign ships, the Radio-Equipment belongs to the ship itself, hence to the ship-owner. They are not loaned by some Radio-Company to the ship.

Since Switzerland does not manufacture Radio-Equipment for ships you will find such of American, German or other origin. Because the most ships are of newer construction so are also the Radio-Installations. However I still can remember where the Receiver needed continous tuning during a QSO due to ship vibrations or temperature changes. But for the Pioneers of SOWP this will be nothing new! However today with the modern communication equipment this will belong to the past.



As probably the most know, also Switzerland has its own Coast-Station. But lets begin from the start of this story and again think back to the beginning of the second world-war.

With the ships of the International Red Cross, and since the 24th of April 1941 also with the ships under Swiss flag, daily QSO was made from the Military-Airport DUEBENDORF (near Zurich). The name of this station was KLOTEN RADIO HEZ. Employee of this "Coast-Station" were the first Sparks onboard ships with Swiss flags. HEZ was mainly engaged with air-traffic-control, civil and military. Maritime mobile service was made incidentally.

This was the first phase of the Swiss maritime mobile service.

Due to the increasing air-traffic and hence conditional transfer of the civil-air-traffic to KLOTEN, todays Inter-continental Airport, in the year 1948 also the "Coast-Station" was transferred to Kloten (remember the name KLOTEN RADIO HEZ for DUEBENDORF?).

HEZ made QSO according a fixed plan with ships under Swiss flag (or Swiss-owned). Officials of the air-traffic control from RADIO-SCHWEIZ AG made contact with aircrafts and also on telegraphy with ships! This was a unique arrangement which was due to the variety of work very popular by the HEZ-Sparks. Although low powered transmitters and unfavourable antenna-locations they made world-wide good QSO's. The Operators working place was located in the Telecommunication center of the Airport.

With the increasing traffic by the airtservice and maritime mobile service a separation of both became a necessity. On the 11th of February 1963 there was the last transmission from HEZ.

With this, the second phase of the Swiss maritime mobile service had gone to end.

( CONTINUED ON PAGE 15 )



# Radio Schweiz AG Bern sets Efficiency Record



PART OF THE TX/STATION AT MUENCHENBUCHSEE - HEB

On the 12th of February 1963 the first transmission from BERN RADIO HEB was put into the air. Compared with HEZ, HEB has undergone a strong change due to the development since the last years. Instead of the crowded workplace of HEZ there is now a spacious room corresponding to the most modern point of view. This working place is located in Bern, the capital of Switzerland.

Personally, during six years I had almost daily QSO with HEZ from ships of different nationalities. I can say, there was always good working with them and since I didnt know any one of the HEZ-Operators personally (by eyeball-QSO), they were known to me by the keying.

The Transmitting- and Receiving-Stations are separated outside the City on favourable locations and are remotely controlled.

The aerials and other equipment meet the highest standard.

In short: HEB can be compared with any one of the modern Coast-Stations around the world. This is also confirmed by the increasingly high traffic.

QSO with HEZ was possible only every two hours. HEB increased the daily Transmitting/Receiving times considerably: 14 hours on Telegraphy, 18 hours on Telephony and 17 hours for Telex.

HEB is also very popular by ships of non-swiss flags due to their efficiency. Only about 10% of all the traffic is made with Swiss ships but 90% is with Foreign ships! In the last ten years, traffic has increased about three times. Logically are the investments which are accordingly made by RADIO SCHWEIZ AG.

To master this traffic, it is not enough to establish an excellent Coast-Station. It needs also a best qualified staff. However, this is at BERN RADIO HEB present.



OPERATING POSITIONS AT STATION HEB



PICTURES - COURTESY RADIO SCHWEIZ AG AND THANKS TO DIRECTOR ERIC WALTER.



R X - STATION AT RIEDERN SWITZERLAND - HEB



# SOUND & THE PEACE OF SILENCE

By H. J. Scott

ONE  
Output

"And silence, like a poultice, comes  
To heal the blows of sound."

-Oliver Wendall Holmes

The science of sound and its effect on people is called Acoustics. It is a branch of physics and electrical and engineering that uses their methods of analysis and of psychology along with other sciences and is concerned with the generation, propagation, reception and use of sound. The word acoustics comes from the Greek word 'akoustikos' meaning "related to hearing".

The smallest intensity that the human ear is capable of hearing is 10<sup>-16</sup> watts per square centimeter and is referred to as the "threshold of hearing". In numbers this appears as

0.000,000,000,000,001 watts per sq centimeter.

The loudest sounds the ear can tolerate in reasonable comfort are 120 decibels above this or, 1,000,000,000,000 times greater than the faintest sound it can hear! This is an almost unbelievable range. At this upper level, one becomes aware of "feeling" the sound. Levels much above this result unquestionably in pain and consequent damage to the ear mechanism. The human ear is indeed a very complex and remarkable organ.

Figure 1 is a chart showing the intensity levels of sound from various sources.

In the frequency domain the range of sound waves may extend from a fraction of a cycle per second to many millions of cycles per second. However, the human ear responds only from a frequency of about 20 cycles to about 20,000 cycles. This range we refer to as the audio frequency range. Frequencies below 20 cycles are referred to as in the infrasonic region and those above 20,000 cycles as being in the ultrasonic region.

There is a very famous old riddle that asks whether a tree falling in a forest made a sound if no one were around to hear it. In seeking an answer to this riddle one is faced immediately with a problem. This is because there are two ways in which to define sound.

First: It may be defined as a stimulus our ears respond to just as the eye responds to light. This is a physiological definition.

Secondly: It may be defined as being composed of vibrations which are produced by some object. This is a physical definition.

In accordance with the first definition, no sound is produced since there is no ear present to receive the response. However, in accordance with the second definition the tree certainly does make a sound since its falling produces vibrations in the process. It is the second definition that most scientists and engineers accept since it describes events that actually occur in nature rather than the simple physiological act of hearing these events.

We often hear the terms loudness and intensity used as if they both meant the same thing. However, the two words have quite different meanings. The intensity of a sound refers to the amount of energy flowing in the sound wave. The loudness of the sound is the apparent strength of the sensation as indicated by the ear. Both the loudness and the intensity depend upon four factors:

- 1) The distance from the source of the sound.
- 2) The amplitude of the sound vibration.
- 3) The density of the medium through which the sound is transmitted.
- 4) The area of the vibrating source producing the sound.

Injury to the part of the inner ear called the cochlea and its associated nerve supply results when the ear is exposed to intense sound levels. This exposure may be due to military activity, industrial occupation, sport, or entertainment. Sound levels of 120 decibels or above are generally recognized as being dangerous to hearing. The higher the level and the more often the exposure, the greater becomes the risk of permanent diminution in hearing ability, and a significant impairment of hearing results.

At levels of 130 decibels or above which are frequently produced by modern power amplifiers such as used by rock and roll bands, no ears are safe, and the deterioration of hearing becomes a certainty and is often quite rapid. The modern youth of today who repeatedly exposes himself to such sound levels may well expect to suffer a considerable degree of permanent deafness by middle age.

Many an old time wireless operator is suffering such an impairment today. He wore headphones clamped against his ears for twelve hours a day, day in and day out and in the process was subjected frequently to high levels of noise and crashes of continuous static particularly in the tropics, and was subjected to tremendous levels of sound when a nearby ship or shore station opened up at full power with his spark transmitter. I know there were times when I jumped right out of my chair and threw my headphones across the wireless room. We had no limiters in our equipment in those days! The result - many of us old timers today are enjoying (?) the "Peace of Silence."

## Sound Measurements in dB's

APOLLO LIFE OFF - 180		
CONCORDE		
BOEING 747 & SIMILAR - - - - -		
VICTORY SIREN - - - - -		
STATIC CRASHES IN TROPICS IN EARPHONE OF WIRELESSMAN - - - - -		
THRESHOLD OF PAIN FROM SOUND - - - - -	PAIN/EARS	140
NAVY FLIGHTER PLANE COCKPIT - - - - -		
OVERHEAD THUNDER CLAP - - - - -		
THRESHOLD OF FEELING - - - - -		130
AIRPLANE - - - - -	DISCOMFORT TO EARS	120
LOUD MOTORCYCLE - - - - -		
ROCK CONCERT - - - - -		
NEW YORK SUBWAY - - - - -		
RIVETER - - - - -	VERY LOUD	110
POLICE/AMBULANCE AT 100 FEET - - - - -		
ROCK DRILL, POWER MOWER, LOUD ORCHESTRA - - - - -		100
HEAVY FREEWAY TYPE TRAFFIC - - - - -	SPEECH INTERFER-	90
DIESEL TRAIN, TRUCK, LOUD SINGING - - - - -		
DISHWASHER - BUSY STREET - AVERAGE FACTORY --	POSSIBLE EAR DAMAGE	80
VACUUM CLEANER, NOISY RESTAURANT TV AUDIO - - - - -		
PASSENGER CAR ACCELERATING AT 50 FEET - - - - -	STEADY SOUND	70
CONVERSATION AT 4 FEET - NOISY OFFICE - - - - -	ANNOYS	60
BACKGROUND MUSIC - - - - -		
LIGHT STREET TRAFFIC - - - - -		
AVERAGE HOME - - - - -		50
COUNTRY HOME - - - - -		
QUIET AUDITORIUM - - - - -		40
FAINT WHISPER - - - - -		
QUIET SOUND STUDIO - - - - -		
BARELY AUDIBLE/RUSTLING LEAVES - - - - -	BARELY AUDIBLE	30
ANECHOIC ROOM - - - - -		
THRESHOLD OF HEARING - - - - -	THRESHOLD OF HEARING	20
		10
		0

THE ABOVE TABLE SHOWS THE APPROXIMATE DB LEVEL OF SOUND OR NOISE. HOWEVER THERE ARE SO MANY 'VARIABLES' THAT IT WOULD BE IMPOSSIBLE TO COMPILE AN 'ABSOLUTE' LIST WITHOUT GIVING LABORATORY CONDITIONS AND MEASUREMENTS. ACTUALLY THE DBA SCALE RANGES FROM ZERO TO 140. THE FIGURES IN HIGHER SCALES ARE EXAGGERATIONS.

[ CONTINUED TO PAGE 18 ]



# - WHY & WHENCE THE DECIBEL -

By H. J. Scott

TWO  
Output

"Beyond the bright searchlights of science,  
Out of sight of the windows of sense,  
Old riddles still bid us defiance,  
Old questions of Why and of Whence."  
William C. Dampier-Wetham

In the history of communications there arrived a time when it became necessary to be able to quantitatively evaluate the relative power or the intensity of an incoming signal. The natural question which immediately arose was, "What sort of a unit of measurement would be suitable?"

Earlier studies of hearing had indicated that the increments of energy necessary for one to perceive a difference in intensity between two sounds are logarithmic in nature. This in essence is the "Weber-Finchner" law of psychology. This law states that, "The change in stimulus necessary to produce an observable change in response is proportional to the stimulus already existing". This applies to visual response as well as to audible response. In fact, it applies to feeling and to pain as well.

As an illustration, on a quiet night in bed the buzz of a mosquito seems annoyingly loud, yet in a motel beside a noisy freeway it is doubtful that the mosquito's buzz would be heard at all, smothered by the background of the freeway noise. Again, in the case of the small hand-held computer, the numbers indicated on its display are seemingly quite bright when viewed in a room indoors in the daytime. Yet, take this same computer outside on a bright sunny day and its indicated numbers seem all but invisible in the background of bright daylight. In both of these examples, the difference in each situation lies in the intensity of the background signal. In other words, with the stimulus already existing.

In seeking a solution for the satisfactory unit of loss or gain, it seemed only reasonable to look to the Telephone Company whose business is, after all, the transmission and reception of information. They had already decided at an earlier time that in order to evaluate the result of the introduction or removal of various components in a telephone circuit, some unit of loss or gain had to be defined.

There were at first three different units used to express the relative loss of power in a signal transmission. The first of these was called the Natural Unit of Attenuation. This unit came to us from physics and was named the Neper or sometimes the Napier. It is based on the Natural or Napierian system of logarithms. The second unit was called the Mile of Standard Cable or MSC, and the third unit was called the Transmission Unit or TU. These latter two came to us directly from the Telephone Company engineers.

Though these three units are defined in quite different terms one from the other, in actuality each is simply a measure of the ratio of one signal power to another signal power. The implication here being that the units differ one from the other essentially one in size.

The Neper expressed the logarithmic ratio between two powers, the ratio being for instance that of power in to power out or vice versa, the logarithm of this ratio being the Natural or Napierian logarithm. Unfortunately, this unit turned out to be of an inconvenient size for practical use in the communication area.

A more suitable unit for telephonic communication was at first defined by the Telephone Engineers as the loss introduced by a mile of so-called standard cable. This was a mile of a then commonly used telephone cable consisting of number 19 gauge copper wire. The physical constants of this cable were; 88 ohms series resistance and 0.054 microfarads shunt capacitance, per mile. The series L and shunt G were assumed negligible. The difficulty with this unit, however, soon became apparent in that it varied with frequency! Consequently, a reference frequency of 796.4 Hertz was chosen for the unit. At this frequency the value for

$$\omega = 2(\pi)f = 2 \times 3.1416 \times 796.4 = 5,000$$

a very convenient figure to work with.

Because of this annoying variation with frequency of the MSC unit, a new unit was devised by the Telephone Company engineers. This unit was independent of frequency, was of a reasonable size, and had a simple physical meaning. It was called the Transmission Unit and designated simply as the TU. It was defined in terms of the logarithm to the base ten, or in other words the common logarithm, of the ratio of two powers.

The TU is in widespread use today under a different name. It is now known as the Decibel and is written in abbreviated form simply as db. The name of this unit honors Alexander Graham Bell. Since the unit originated with the Telephone Company, this name is quite understandable.

The relationship between the Neper, the Mile of Standard Cable, and the Decibel may be indicated as follows:

Multiply	By	To Obtain
Nepers	8.686	Decibels
MSC	0.947	Decibels
Decibels	0.115	Nepers
Decibels	1.056	MSC

At a frequency of 796.4 Hertz one mile of Standard Cable is seen to be a little more than 5½% larger than the Decibel.

Since its inception the Decibel has found wide application in communications and engineering and in fact in various other fields. In using the Decibel it must be remembered that it represents only a RATIO between two values. No absolute value is known unless a reference level is stated. For instance, if the sound power output of a speaker is given as +30 db, it gives no indication of how much power is being radiated. If, however, it is stated that zero level is one milliwatt, then it is immediately known that one watt is being radiated from the speaker.

Since the Decibel represents a power ratio, then it is most certainly related to a voltage or a current ratio in an electrical circuit. However, here some caution must be exercised. For instance, a voltage gain may be expressed as so many db, but this is only meaningful if the voltages are measured across equal impedances. The same type of caution applies to current gain.

The voltage gain of an amplifier as an example is often expressed as a gain of so many Decibels. However, this as pointed out, is only the true gain if it is measured across the same value of impedance at the output as at the input. This is seldom done in industry as usually in this case the simple ratio of output voltage to input voltage is converted into db. But, the input impedance is usually quite high and the output impedance is usually relatively low so that the ratio of output voltage to input voltage as indicated above, when converted into a db reading is not a true indication under these circumstances.

At the present time there is no uniform agreement on a standard zero or reference level. Its choice is completely arbitrary. Some of those that have been used are:

Telephone System	1 milliwatt
Sound Motion Pictures	6 milliwatts
Radar Systems	1 watt
Acoustics	10 <sup>-16</sup> watt per square centimeter

The American Standards Association has recommended one milliwatt in 600 ohms for radio program transmission and has introduced the symbol "vu" to indicate the number of db above or below this level. It has also become customary in some instances to indicate power levels in "dbm" to signify the number of db above or below one milliwatt.

In the acoustic field its zero level has been universally adopted and it is 10<sup>-16</sup> watt per square centimeter which is about the lower limit of audibility of the human ear.

( CONTINUED TO PAGE 18 )



## (1) Why and Whence the Decibel ?

( CONTINUED FROM PAGE 16 )

As has been indicated it is evident that the reference level must always be stated in any discussion involving db units in order that the absolute value becomes meaningful.

So, when we talk of dbs we should always bear in mind:

- 1) In the frequency realm the db is a distortionless unit.
- 2) Since the db unit is logarithmic in character it allows the simple arithmetic addition of the db losses occurring in networks connected in tandem.
- 3) Fundamentally the db is a unit defined in terms of the RATIO of two powers.
- 4) The smallest change in power that the average human ear is capable of detecting is essentially one db.
- 5) Before any actual value of a given db amount can be evaluated, the zero, or reference level, must be stated.



"If you don't want any QRM from your XYL you'd better QRT, OM."

## (2) The Sound and the Peace of Silence

( CONTINUED FROM PAGE 17 )

Because of the way our ears are located in our head we are blessed with the property of binaural hearing. This gives us the ability to localize the source of a given sound. This is sometimes called the "cocktail party effect". Without it we would be unable to extract the speech of a single person from out of the surrounding babel. This effect is also related to the "precedence effect". That is, the ear can concentrate on the first arriving sound wave and reject later arriving echos of the same sound wave. This makes it possible to understand speech in reverberant rooms. An echo that arrives 0.01 second later can be 10 times as intense as the original sound before it becomes distracting to the listener!

In a reverberant room sound reaches the listener's ears not only directly but also by way of reflections from the ceiling, walls, and floor. If they are sufficiently strong and arrive after a delay greater than 0.05 second they are heard as echos, otherwise they are heard as what we know as reverberation.

Sound travels at different velocity in different media. TABLE 1 indicates the velocity of sound in some common substances.

TABLE 1

MEDIUM	VELOCITY IN FEET PER SECOND
Air	1,087
Water	4,850
Brick	11,980
Steel	17,200
Glass	18,045

Because of its nature, sound will not travel in a vacuum.

The values in TABLE 1 are average values as determined by many different experimenters under sometimes widely different conditions.

So remember - sound is not always sweet music to the ear!



## 'EASTCOASTER'

BY GEORGE C. WILKINS, SR.

**M**any of your stories seem to be regarding west coast stations and runs and the characteristics of the coastal stations during those days. I may have missed the boat, so to speak, but having put in a lot of time on the east coast I can recall the sounds of the different stations over there and it would be nice to hear from someone who can do the same.

For instance - leaving New York bound for Maricao, Curacao, etc., we would work WSE for a day or so with a high-pitched synch. gap, I think. Then Cape May with a somewhat high pitched non-synch transmitter. Usually no traffic for him. Then WHA, Cape Hatteras with what sounded like a 120 cycle synch. WSV in Savannah usually did not come in too much. Can't remember what he sounded like.

Our most used coastal station was WST, Miami Beach, Fla. He had a low pitched non-synch rig that seemed to get out exceptionally well. When within a few hundred miles of that station you could hear him start his rotary before he even hit the key. When signing off he would shut down the rotary motor on the last dash and sort of drop his voice.

WST used to send press every morning and as I remember the op's name was Chapman, and he would sign his name at the end of the press broadcast. He had a beautiful fist and was rightfully proud of it.

Once in a while we could work PJC in Curacao the first night out of New York. We were acquainted with the ops down there and it was always a pleasure to pick them up early in the voyage.

The static used to be so bad in the Caribbean during the day that communication with WST was impossible. Just before daylight the static would drop and WST would come in loud and clear for maybe an hour. We had some friends in Curacao who would file messages with us before sailing time due to the high cable rates between there and the U.S. So, it was up to us to get their stuff off during that short period. Enough about WST.

Running Trans-Atlantic it used to be real good if you could work VCE, Cape Race and GLD, Land's End on the same night. Using a carborundum detector only, of course. At certain times of the night NKB down in Texas would come through and just for the heck of it I used to send our TR through that station.

Some time after this I built up a 'Honey-Comb Coil' receiver with a 2-stage amplifier. When in Mid-Atlantic with bad static conditions and NAA not coming through well, I would tune to NPL, Point Loma, CA. and get solid copy right into England or wherever. Used to gather a bunch of nearby ships on 450 (I think) and qsp the news from NPL. Once while in New York Harbor I made another fellow a bet that I could receive the time signals from FL, Eiffel Tower. We listened and I won the bet. To newcomers this doesn't sound like much of a feat. To me it meant a lot.





CANADIAN



WIRELESS

## EARLY STATIONS ON CAPE SABLE ISLAND

By James C. Taylor 2923-SGP



STATION VCT

Prior to WW1 there were two "Sable" wireless stations operated by the Canadian Marconi Company. I believe VCT was the call of Sable Island located about 200 miles east of Halifax, Nova Scotia, and VCU was the call of Cape Sable located at the southern tip of Nova Scotia. Both of these stations were located on islands and there was some confusion in identifying them separately.

In the early days of WW1 the Canadian Naval Service took over the operation of these stations and in 1917 Cape Sable was converted to a listening post. Vacuum tube receivers and direction finding equipment were installed and the secret call FRN was assigned. The spanish N was transmitted — — — — —. Transmitting equipment consisted of a 5 KW rotary spark powered by a gasoline driven generator, also an emergency transmitter using a 10 inch spark coil powered by storage batteries. These transmitters were used only when the landline circuit was disrupted by storms. Another station was built near Cape Sable at Barrington which took over the previous duties of VCU.

Regarding my belief that I was the first operator to report reception of distress messages from shipping attacked by enemy submarines in the Western Atlantic: On about May 20, 1918 a warning was transmitted to all ships that an unidentified object had been sighted in mid ocean which could possibly be an enemy submarine. It was known that submarines were capable of crossing the Atlantic because in 1916 the Dutchland had docked in New York harbor and returned to Germany with a cargo of strategic materials. This submarine was classed as a cargo vessel because it carried no torpedoes and did not attack shipping.

On or about May 25, 1918 at 10:00 AM local time while on watch at FRN, I picked up a SOS SSSS message from a ship under attack by a submarine. I copied the message, took a directional bearing, and listened to hear if any station replied to this emergency. Not hearing any reply or further

distress messages, I attempted to forward this information to Canadian Intelligence at Halifax over the land line but found it to be inoperative. I then forwarded the message by the emergency spark transmitter. Several stations heard my transmission and began calling the vessel but received no answer.

About two hours later I received a message from Naval Intelligence asking for a confirmation of my previous message because this was the first and only report received of a submarine attack in the Western Atlantic. Following this date distress messages of this type became a daily occurrence. Sometimes three or four per day. FRN also copied communication between enemy submarines and forwarded them to Naval Intelligence.

I was active in radio communications in WW-2 in the U.S. Army Signal Corps in the North African and Italian campaigns. Since 1912 amateur radio has been my hobby and am still active at age 81. In 1976 I was listed in the ARRL DXCC Honor Roll under the call letters W4EEO.

## Sable Island "VCT" The Atlantic Graveyard

SABLE ISLAND (VCT) THE "ATLANTIC GRAVEYARD"

43° 56' 20" N 60° 02' 45" W

During the first three decades of this century, the greatest fear of an operator was a transfer to Belle-Isle or Sable Island. What could one do in those days? Obey or resign. There was a small monetary compensation attached to the appointment—a \$5.00 monthly isolation allowance.

Sable Island is located 180 miles southeast of Halifax and is 20 miles long by one mile wide and rises in certain places to heights of approximately 90 feet above sea level. It is composed wholly of sand—(no stones nor pebbles are ever to be found)—and as a result is of constantly changing contours. There are dangerous sand bars at both ends and according to the official records these have claimed over 200 ships—dating back almost to Columbus Day. Objects found on the—such as muskets, bayonets, swords and coins bear witness to this fact.

Stubby coarse grasses, wild peas and cranberries provided food for hundreds of wild ponies of unknown origin that lived on the Island many years ago. Fresh water found a few feet below the loose sand is plentiful all over the island.

Very little fishing can be done due to high seas and dangerous surf. Swimming and pony rides in the summer and quiet games of cards in the winter are the most popular means of recreation.

For a number of years now, operators have been replaced by radio beacons which warn shipping to steer clear of the Island and telephone has taken over the telegraph.

I know many of the operators who served on Sable Island in the early days do not hold very fond memories of their periods of isolation.

The picture of the station building at Sable Island Station "VCT" and the above article were furnished by the late Cyprien Ferland 770-SGP (SK-3/18/78). He served on Sable Island at Station "XVV" on which we have no details."Cyp's" FS was VCD-Grosse Isle 1916.



## THALES OF MILETUS



THALES OF MILETUS

By H. J. Scott

We cannot talk about the origin of radio without going back to the science without which it could not exist. The roots of radio are deeply imbedded in, and are inseparable from the roots of electricity and magnetism. It is interesting to conjecture how far back into antiquity we can trace any of these roots.

Since we have to start somewhere, it seems as though Thales of Miletus might be a good one to start with so let us fill in some of his background.

Miletus was an ancient Ionian city on the west coast of Asia Minor and was located near the mouth of the Menderes River. The Ionians, a Hellenic people, settled on the north coast of Peloponnesus about 1100 B.C. They were ambitious and established colonies on the western coast of Asia Minor and the adjacent islands.

So far as is known, Thales was a citizen of Miletus and was born as near as historians can determine about 624 B.C. His father was Carian Examyas of Miletus and his mother's name was Cleobuline.

Thales was educated in Egypt by priests in various temples and was instructed in mathematics and philosophy. While in Egypt he used his new found knowledge to calculate the heights of pyramids and he showed how to calculate the distance that ships at sea were from the shore.

Thales was the earliest of the Greek scientists and scholars, and he was the founder of the Ionian School of Philosophy. In time he became known as one of the Seven Wise Men of Ancient Greece. He was the inventor of Theoretical Geometry, and it was he who introduced Geometry into Greece. He was the first one to demonstrate that a circle is bisected, or cut in half, by its diameter; that the angles at the base of an isosceles triangle are equal; and that two straight lines which intersect each other produce opposite angles which are equal. These sound so obvious to us now BUT, it is quite a different matter to prove these concepts. In the area of astronomy, he was the first one to estimate (with fair accuracy) the size of the sun and of the moon.

Philosophically, he considered that water was the primary substance from which everything came and to which ultimately everything returned. Today we philosophize somewhat differently - we say, "Ashes to ashes and dust to dust"! He believed that the earth was a flat sort of 'frisbie' and that it floated on water.

Thales knew that certain iron ores (later known as loadstones) such as were found near Magnesia in Asia Minor, would attract particles of iron. He also discovered that when he rubbed a piece of amber with a cloth that the amber then attracted to itself bits of leaves, feathers, straw, pith, and small particles of dust.

Except for such elementary facts as these, nothing more was known about electricity and magnetism until about the end of the sixteenth century. Thunderstorms were acts of God, of course. The phenomenon of electricity and magnetism which are so important in our lives today, played no part in the everyday life of early civilization.

The exception to the above perhaps is that at a very early date the Chinese are credited with knowing that certain pieces of natural iron ores had the interesting property of arranging themselves lengthwise along a meridian in a north and south direction. As a north-pointing instrument such a device was used in navigation before the Christian era.

It was believed by Thales that the magnet and the amber had souls because of their attractive powers, and as a result of these attractions he attributed life to inanimate objects, the basis of his argument being the behavior of the amber and of the loadstone.

True, his views of electricity and magnetism are vastly different than are ours today. However, since we do have to start somewhere, it seems as though as good a place to start as any is with this man. Thales died in about 546 B.C.



## AUTHENTIC "STATIC-ROOM TALES

By Henry W. Dickow

"Some things that happen to Sparks could be real funny if they were not accompanied by serious overtones," said William A. "Bill" Breniman, wireless operator aboard the S.S. West Henshaw (KEBQ) operated by the McCormick Steamship Company for the U.S. Shipping Board during and after World War I.

It is customary, as all sea-going operators know, for the skipper to ask the chief engineer, chief mate, and steward for a list of supplies needed in each department for the ship's next voyage. Such a list, or requisition, is usually prepared about ten days before the ship reaches port. It can include a hundred individual items or more, and is sometimes sent in code. Upon receipt by the ship's owners, the information is passed along to the various ship chandlers and other suppliers who then arrange to have the items on the dock when the vessel arrives. These requisitions are commonly known as "stores messages" and they consolidate the various items into a single radiogram.

This routine was observed aboard the West Henshaw, enroute to Auckland, New Zealand. The skipper gave the long wireless message to Bill Breniman who sent it on its way eight days prior to the scheduled arrival of his ship at Auckland.

### A 'not too literate' Stores Message

The skipper wrote the requisition in long-hand, one item requested by the chief engineer reading 65 BBLS ENGINE GREASE, a special kind of special purpose water-packing grease of which only small quantities are required for an extended voyage. But the captain made a mistake, by ordering this huge quantity of grease; he should have written it as 65 LBS, not barrels.

When the West Henshaw was warped to the dock at Auckland, a large number of dray wagons, loaded with big metal drums, was seen on the wharf. The ship's agent came aboard and remarked to the captain: We couldn't get all of that special grease you ordered in your radiogram because there wasn't enough of it available in New Zealand - so we ordered the remainder from Sydney, Australia, and it will arrive here by ship before you depart. We do have forty barrels on the dock right now, which should take care of your requirements before the rest of it arrives."

The Skipper understandably was quite agitated by this remark, and summoned Sparks to his cabin.

"Show me that wireless requisition you sent," he demanded. Breniman took the original message to the captain's cabin, saying: "Here it is - just as you gave it to me."

He allowed the captain to read the message, but without it leaving his hands. It read: "65 BBLS (barrels) of engine grease, and not 65 LBS (pounds) which was the amount actually ordered by the chief engineer. The captain made the error when he prepared the requisition.

Said Breniman: "The forty drums of grease that the ship's agent had waiting for us on the wharf was a thousand times more than we needed - let alone the additional grease which later arrived from Australia. We subsequently learned that the U.S. Shipping Board took over the surplus barrels of grease and it was rumored that they had enough of it on hand to supply every Shipping Board vessel afloat for a long time to come. The sight of those many dray wagons with their teams of large draft horses on the open dock as we pulled alongside Auckland is one that I will always remember."

### Q: What is an Iceberg Made Of ?

After the Titanic ran into an iceberg and went to the bottom of the Atlantic in 1914, Bill Breniman conducted a month's-long research into the details of the disaster in advance of a story he had in preparation of a national magazine. His studies included the findings of the British Court of Inquiry under the chairmanship of Lord Mersey of Toxted, and another conducted by the United States Senate.

It was during the latter proceedings that a U.S. Senator put this question to his colleagues: "What is an iceberg made of?" Ah so!

### Singapore Hawker's Ploy

"My side-kick, Vernon Goldsmith, the junior wireless operator on the S.S. SANTA CRUZ (WBD) of the Pacific Mail Line, had just returned aboard with me after looking Singapore over," said Bill Breniman with a sampling of the Gin Slings at the Raffles Hotel, for which the city is famous.

"Not many passengers had yet returned shipside during our brief layover. When we came aboard we found a swarm of hawkers on deck, attempting to interest the passengers and crew in their wares - mostly semi-precious stones.


"One rather persistent fellow proudly displayed a handful of letters, claiming them to be endorsements or recommendations that he had received from other Americans, including wireless operators, who purchased his merchandise.




# Tales of the

# WIRELESS PIONEERS

True Experiences and Adventures of Commercial "Brass Pounders"



Edited by Fred Rosebury



## "Once Bitten - Twice Shy"

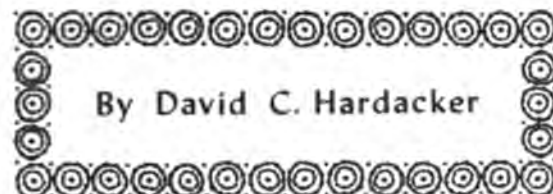
## NAVY RADIO EXPERIENCE..

## ..IN WW2



By

"Cyp" Ferland



The following narrative by Canadian Marconi Radio Officer Harold W. Turner illustrates the suspicion with which unknown vessels were investigated by Allied naval patrols on the high seas during the Second World War.

The U-boat menace was at its height in the Atlantic; many ships of the United Nations were being sent to the bottom and, from the sustained ferocity of the attacks, it was strongly suspected that a mother-ship was refuelling the enemy subs in mid-ocean. Orders were issued by the Admiralty to keep a sharp lookout for it and if overtaken "capture or sink her".

Our merchantman was plowing along at full speed, unescorted when, at dawn, two American Destroyers appeared on the horizon off our port bow and promptly challenged us. They circled us and then, from the starboard quarter started to overhaul us.

( CONTINUED ON PAGE 22 )

## Dickow's Tales

"Out of idle curiosity we read these letters and, sure enough, found one signed by Leon Cameron, a wireless operator we had met several months before, and who had visited Singapore on a Shipping Board vessel.

"His letter, addressed To Whom It May Concern, stated that he, Leon Cameron, had purchased gems from the hawker . . . that, in effect, the hawker was a very tricky person and could not be trusted the length of a rusty left-handed capstan wrench! Besides being a sharpie, he was also crafty, sly, dishonest, and a first-class cheat and fraud. Cameron implored one and all to exercise great caution in any of their dealings with the hawker.

"Being thus forewarned, Goldie and I, after much haggling, looked over his wares and bought quite a few gem stones which, we learned later, were very good buys. We never did know whether the hawker actually understood the content of Cameron's derogatory letter. After we had completed our purchase, he asked us for a letter of 'endorsement', handing us a small stone as cumshaw. Goldie and I obligingly prepared a letter for him, with information similar to that contained in Cameron's letter.

"We regretted our action some time later, when we learned that he had sold us many excellent stones at a fair price."

### Dickow's unpublished Book

Story from unpublished book "TALES OF THE WIRELESS PIONEERS" (Book 2 - Telegraphers & Others I have known) by the late Henry W. Dickow, Honorary Member #1 and Member 3-SSGP. Mr. Dickow donated his publications to Bill Breniman before becoming a silent key on April 17, 1971. The 'Ancient Mariner' is publishing them for enjoyment of Society members.

Dave Hardacker writes that from 1939 to 1943 he was a Radio Striker, RM2/c and RM1/c CW operator in the USS CHICAGO (CA29-NAGM) a heavy cruiser commissioned in 1929; a Radio Technician and Chief Radio Technician in the USS CATES (DE763), 1943 through 1944; and Chief Radio Technician in the USS LOUISVILLE (CA28-commissioned in 1928, a sister-ship of the USS CHICAGO) in 1945.

The CHICAGO was the Commander of the Cruiser Scouting Force and Commander of the Hawaiian Detachment in the period from 1940 through the end of 1941. In March of 1941 the CHICAGO made a trip to Sydney, Australia, with ship's prints and fueling hoses. By late 1941 she was back in Australia as a member of the ANZAC Naval Squadron which was the only Naval force in the South Pacific in early 1942. This Squadron was made up of Australian, New Zealand, Free French, Dutch, and three US Naval ships. By late 1942 most of these ships had been sunk in ship-to-ship battles. The CHICAGO had seventy feet of her bow blown off in such a battle in early August 1942. She sat in the harbor at Noumea, New Caledonia, and for some time acted as Radio South Pacific. In this function, before there was a radio station operational in the area, the CHICAGO relayed traffic from the invasion force at Guadalcanal to Fleet headquarters in Hawaii.

A temporary bow was put on in Sydney which enabled the ship to make it to the States for major repairs.

While Dave was a Radio Technician he also filled in as CW radio operator, especially in the USS CATES where he was involved with the "Huff-Duff" (HF/DF) system of locating German U-boat units. The CATES was the Commander of Escort Division 54 which ran convoys in the Atlantic. He was also on the Crypto Board of the USS CATES and Escort Division 54, in which he ran ECM US crypto machines and British ECCM crypto machines. As he had been a CW operator he could sometimes break garbled messages better than others on the crypto board.

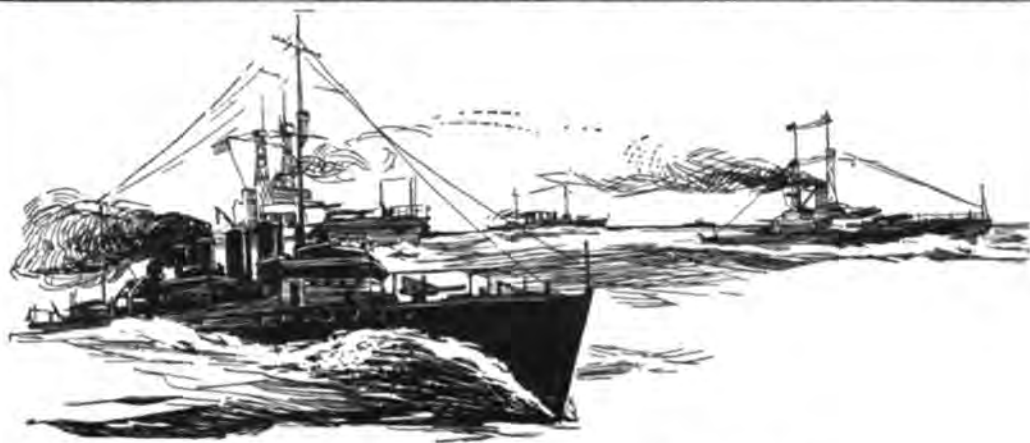
In the USS LOUISVILLE, a heavy cruiser, he was Chief Radio Technician. The LOUISVILLE had fifteen battle stars; it could no longer keep up with the fleet. When the war ended she was sent to Vladivostok, USSR, as a submarine communications ship.

The CHICAGO had an operational air search radar (CXAM No.5) in 1940, as well as a high-power HF water-cooled transmitter (TBA Xmitter as exciter for an amplifier known as TBB) for CW only.

Dave was also a sonar CW operator for a bit. This was used to communicate with US submarines.

( CONTINUED ON PAGE 22 )





## "Once Bitten" Cyp Ferland

One of them closed to within two miles and started using his blinker. I joined the Second Officer on the bridge and both of us tried to "read" him, but the early morning haze made part of the message indistinct, and all we could make out was: "Stop for in ..."

As the Second remarked he had better call the Skipper, I was watching the Yank and suddenly saw a blinding flash aboard her.

"There's been an explosion aboard her" I yelled, when there was a shrill "whee-ee-ing" sound and a shell went over our bow. Immediately we ran up flags denoting we were stopping. The Captain reached the bridge and pulled the engine telegraphs to "stop".

The destroyer had cracked on speed and was racing along twenty degrees off our starboard bow. They signalled us in Morse, but repeated so quickly we were not sure whether they meant "BP" or "PB". Now there is the world of difference in the two, for the former means "stand by" whereas the other signifies "proceed".

The consensus of our Officers was that she was blinking "proceed", when it was remarked that every sailor was at battle station, equipped with steel helmet and both turret and anti-aircraft guns, as well as torpedo tubes, were trained on us. She was at point blank range of a mile and one salvo would have blown us out of the water. Her sister ship was about three miles away and she, too, had all armaments pointed in our specific direction.

After digesting these facts, the "Old Man" decided that prudence was a cardinal virtue in a situation like this - he kept his hand away from the engine-room telegraph.

A longboat pulled away from the nearest man-o'-war: in it were an Ensign and six Ratings armed to the teeth with rifles, revolvers and tommy-guns. A few minutes' conversation and a close survey of our papers soon convinced the Ensign that ours was a bona fide Allied craft on legitimate business.

In conversation with the leader of the boarding party a short time later, he gave us the reasons for the elaborate precautions taken by their patrol. Prior to the entry of the United States into the conflict, H.M.A.S. Sydney encountered a large merchantman flying a neutral flag. The Sydney was seven miles away when contact was first established, but she permitted the "neutral" to close to fifteen hundred yards. Actually it was a disguised German raider and at that range she dropped part of her fake superstructure and opened up with her eleven-inch guns. The Australian was raked from stem to stern, her fire control tower and other vital spots received direct hits and within thirty minutes she sank. The Hun was not to get away lightly: Aussie marksmanship had started uncontrollable fires and hours later she was blown to smithereens when the flames reached the main magazine.

Many months passed before the whole tragic story was pieced together, and it was used as an object lesson. It was instilled into Naval Commanders that all unidentified or seemingly innocent vessels be approached warily, and that they open fire at the first suspicious move.

He added that had we started under way, they would have assumed we were trying to escape or close in and consequently would have thrown everything at us but the kitchen sink.

It was simply a case of once bitten, twice shy.

### Note

Harold W. Turner - Service 1918-1958

Served on H.M. Transport "Glenspean" during the latter part of WW I. After the war served on liner "Parima", Riverboat St. Lawrence, then on the C.G.M.M. "Canadian Commander" for five years. Then came the long stretch of duty, 14 years on the "Lady Rodney". At the outbreak of WW II, transferred to "Empress of Scotland" carrying troops from Australia to U.K. After the war, spent six months at the Montreal Transoceanic office, then to St. Michel marine station and ended his career as W/O at Dorval Airport.

Died from heart attack on December 26, 1969.



## U.S.N.-Dave Hardaker



Until late 1942 the CHICAGO had equipment for sea sonar search. It was unusual for such large ships to have this type of equipment.

-David C. Hardacker SOWP-3850; W7T0

ex: W6PIZ - 1938

WP9AS - 1951

W6IT - 1967

● For those not familiar with Navy radio terminology, Dave Hardacker has furnished the following glossary:

● A Radio Striker was a person just learning to be a Radioman. In general he was a person who had gone through a three month radio operators' school and had less than one year of duty aboard a ship. Dave believes a person had to have 18 months in the Navy before he was considered for taking the exam for the lowest grade of Radioman which was called RM3/c (Radioman Third Class). Above this there were two other grades. RM3/c would be expected to copy code groups about 15 wpm and plain text at 20 wpm. RM2/c, the next step up, would be able to copy faster and would have more knowledge about procedure, etc. RM1/c is the top of the line; he can hold down any circuit, usually can copy something like WCX press (at some 35 wpm or a few words behind) and was expected to be fairly sharp at maintenance. He would be in charge of all the Radiomen in a ship about the size of a destroyer. Above RM1/c there was a rating of Chief Radioman (CRM) who could do anything a RM1/c could do, must have had about a year of schooling in radio maintenance, and is generally in charge of a large radio gang in cruisers, aircraft carriers, battleships, shore radio stations, etc.

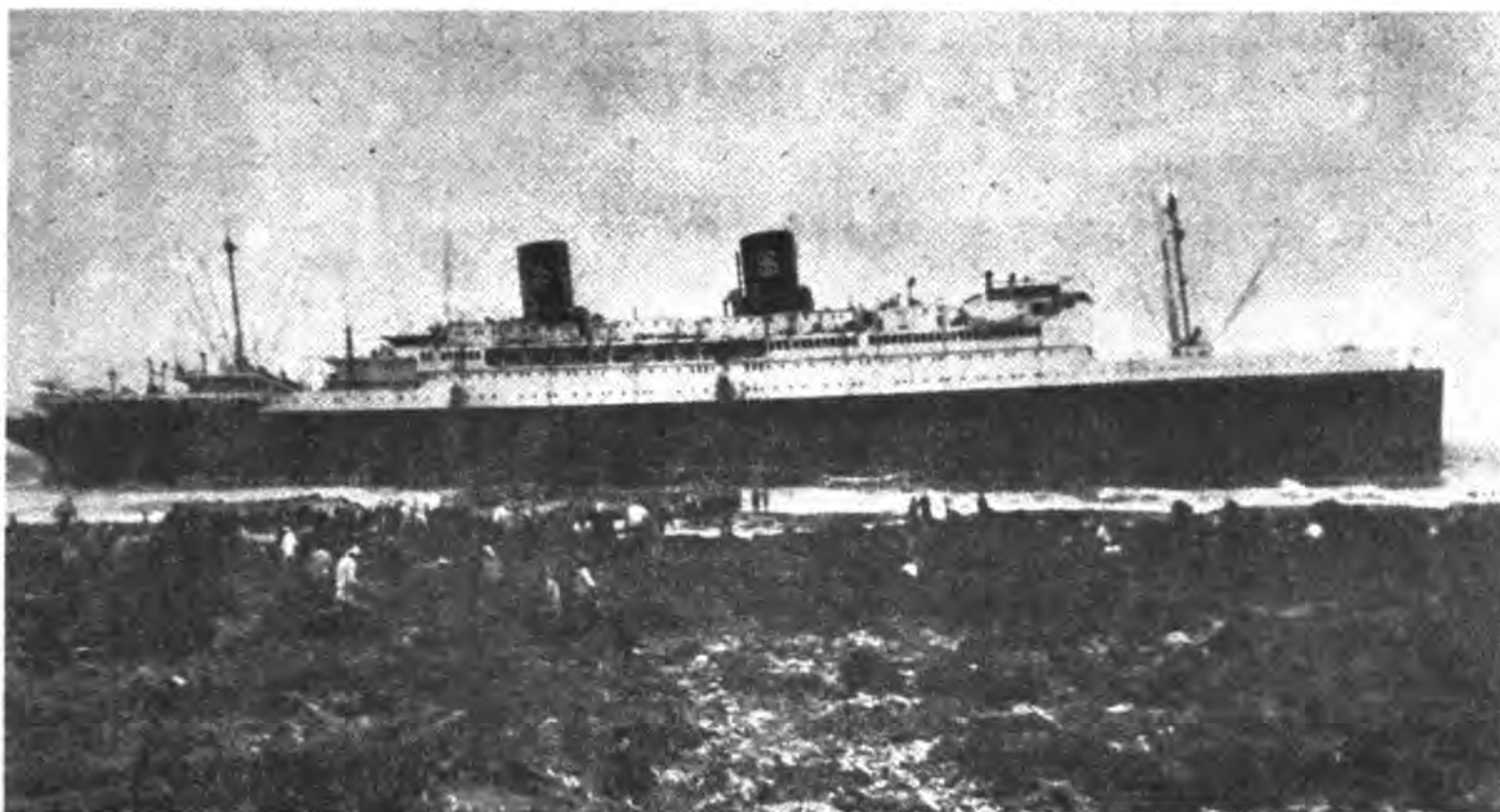
● Prior to WW2 only one school was available to personnel desiring to be CRM. This was the Advanced Radio Materiel School, Naval Research Laboratory in Annapolis. One class of about 30 men was graduated each year. This school was also used by the US Coast Guard and US Marines. The flunkout rate was extremely high: in fact, just to get in was considered an honor. A vast number of personnel retired as RM1/c because they hadn't graduated from the school. In those days the terms "Radio Technician" and "Electronic Technician" didn't exist in the Navy; every one was a Radioman. Period.

● The terms "Command" and "Commander" might be confusing to non-Navy people. Some ships were "Flagships," i.e., they carried an admiral aboard who did not have charge of the ship but rather had charge of a large number of ships. When one spoke of "Commander Cruiser Scouting Force," for example, everyone in the Navy knew which ship he had his "Flag" on, and which ships he was in charge of. Such Command ships had additional circuits which really had nothing to do with the actual ship. For example the ship call might be NAGM, while the Command call was MBT (for Commander Cruiser Scouting Force). Radiomen manning such circuits were hotshots called "Command" or "Flag" Radiomen. They were assigned to the Command or Flag, and not to the ship. In general a Command ship had additional equipment, ad-

( CONTINUED ON PAGE 28 )



## PRESIDENT HOOVER IS BREAKING UP !



### Wreck of the S.S. PRESIDENT HOOVER, KDMW - 1937

Picture of the S.S. PRESIDENT HOOVER aground on Hoishoto Island about 15 miles off the Southeast Coast of Formosa on Dec. 11 1937. 860 passengers and crew were aboard the President Hoover when she grounded on the rocky shores. This photograph of the ship was furnished Walter Baumgartner, Radio Officer by Myron E. Ferry who was the United States Seapost clerk aboard the Hoover (KDMW) when she was wrecked. Walter Baumgartner was aboard the SS President McKinley, the first Dollar Line vessel to arrive on the scene of the disaster.

By Walter Baumgartner, 297-P

The SS President Hoover, pride of the Dollar Steamship Company fleet, was christened at Newport News in 1930 by Mrs. Herbert Hoover. With the radio call KDMW, the President Hoover was the largest vessel ever built in an American yard — 615 feet in length, 21,936 tons; it cost \$8 million.

She plied the waters of the Pacific in the West Coast-Orient trade for some years — but the year 1937 was destined to be an unlucky one. On Aug. 30, near Shanghai, at the mouth of the Yangtze River, she sustained considerable damage in a bombing attack by Chinese Air Force planes, an innocent victim of a war that had developed between Japan and China.

On Nov. 22, under the command of Capt. George W. Yardley, the ship sailed from San Francisco for Japan, nine days behind schedule. As part of an effort to make up lost time and get back on schedule, calls at Shanghai and Hong Kong were cancelled, and the vessel sailed from Kobe directly for Manila, with a crew of 330 and 530 passengers.

On the black, rainy night of Dec. 10, around midnight, on an unfamiliar course down the east coast of Formosa, the white foam of "breakers ahead" was sighted. Shortly thereafter the vessel was hard aground on the rocky shore of Hoishoto Island, 3½ miles long and 2½ miles wide, about 15 miles off the southeast coast of Formosa.

(The New York TIMES reported, from Manila, on Dec. 11: "The President Hoover did not follow her usual route this trip, skipping China ports entirely and steering east of Formosa directly for Manila...This change was understood to be partly due to the necessity for recovering time lost while she was in dry dock after she was bombed off the mouth of the Yangtze River by Chinese planes three months ago, and partly to a desire to avoid the Japanese blockade of the Chinese coast.")

With the weather worsening during the night, daybreak revealed the plight of the vessel; and the operation of transferring passengers and crew to the safety of the island commenced.

The first lifeboat ashore carried a line which was made fast between ship and shore, about 200 yards, and served as an aid for subsequent lifeboats as they made their way to and from shore.

The operation was not without discomfort, as it was necessary to wade the last 50 feet from lifeboat to shore on a coral bottom, through fuel oil that had leaked from the ship's ruptured tanks. Shoes were ruined, and bodies and clothing were covered with the black goo.

Hoishoto Island, under Japanese mandate, had a reported population of 2300 betel nut-chewing natives, who had never before seen a white man, and a small garrison of Japanese soldiers and marines.

A short distance from where the lifeboats put ashore was a village with a small mission schoolhouse in which passengers and some of the crew were permitted to stay until arrangements could be made to remove them from the island.

Each person was permitted to take only one piece of luggage upon disembarking from the ship, and two days and nights of discomfort and privation ensued before the SS President McKinley, which was in Hong Kong at the time, arrived on the scene.

At daylight of the third day, from calmer waters on the opposite side of the island from where the Hoover lay, the President McKinley began taking aboard passengers and some crew members for transport to Manila. The majority of the crew was obliged to spend two more nights on the island before being picked up by a third Dollar Line vessel.

Other vessels responding and on the scene of the disaster were two American destroyers, Alden and Barker, from Manila; the Canadian Pacific liner Empress of Asia; a German freighter, Preussen; a Japanese freighter, Hozan Maru, and a Japanese cruiser. All were subsequently released.

Radio operators aboard the President Hoover are presumed to have been Bolger, Eisenberg and a third operator not recorded, as was the case when the vessel was bombed at the mouth of the Yangtze. On board the President McKinley, KDSL, were Radio Operators Thomas Lowery, Gail McNair and Walter Baumgartner.

(The New York TIMES account of Dec. 11 included this: "The President Hoover has had bad luck since last fall. In her last outward voyage, she encountered a vicious typhoon in approximately the same locality where she is now aground, and arrived in Manila with two injured passengers and broken furniture, reporting she had been tossed almost helpless by mountainous seas for a whole day.")

Myron E. Ferry, who at the time was United States Seapost Clerk aboard the Hoover, furnished much of the information for this account.

At year's end the deserted President Hoover lay wedged on the rocks of Hoishoto, its underwriters ready to call it a total loss.



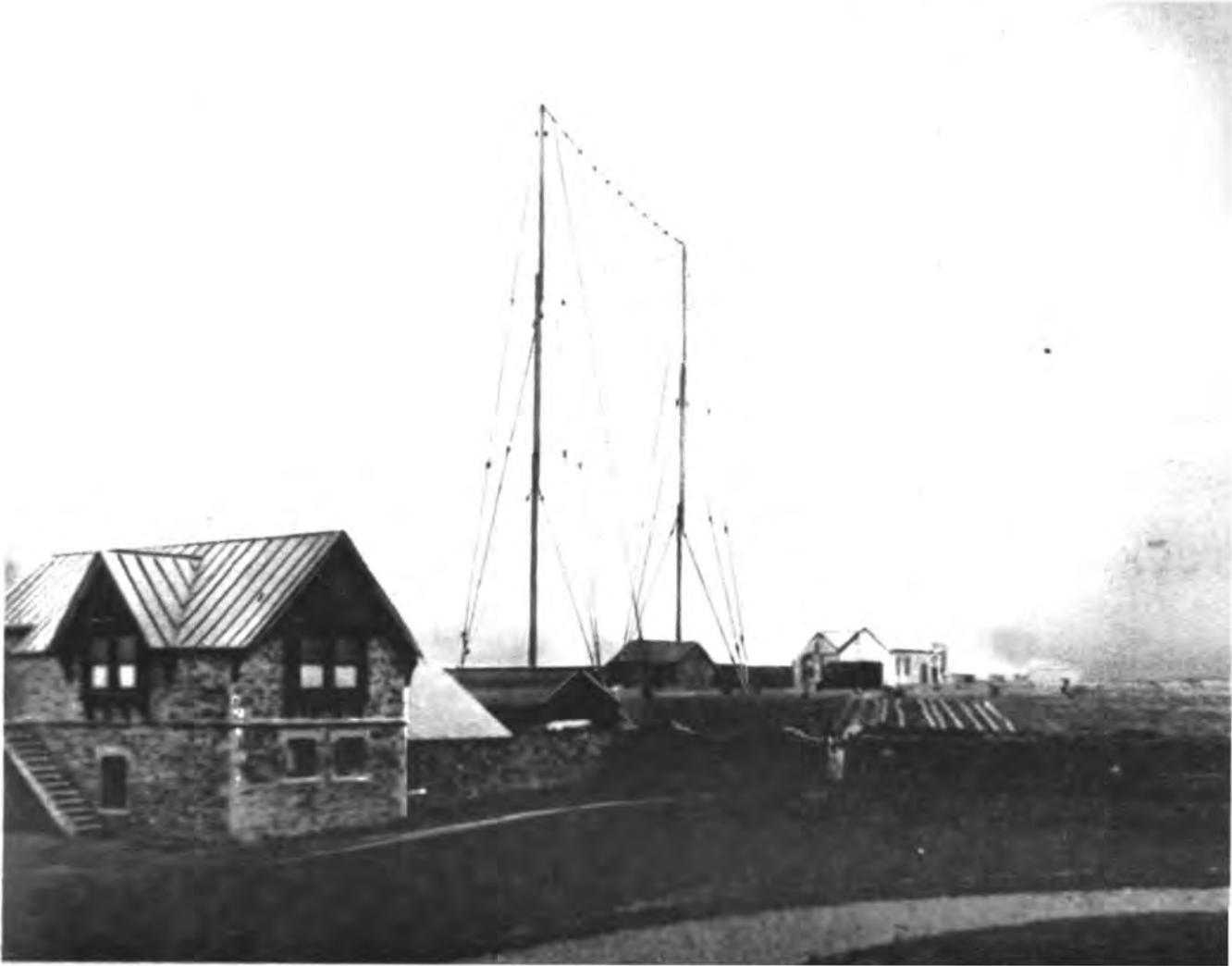
WALTER BAUMGARTNER 297-P  
R/O. SS Admiral Peoples/WJEI  
Circa 1930-33.



**POLDHU IN CORNWALL**

**Birthplace of Commercial Wireless**

**A SHRINE TO MARCONI**



BUILDING, GROUNDS AND AERIAL FROM WHERE FIRST WIRELESS SIGNAL SPANNED THE ATLANTIC

POLDHU, IN CORNWALL, FROM WHERE THE FIRST MARCONI WIRELESS SIGNAL WAS FLASHED ACROSS THE ATLANTIC ON DEC. 12 1901. FOR THIS FEAT, A FAN AERIAL WAS USED. A MEMORIAL MONUMENT NOW MARKS THE PLACE WHERE THIS HISTORIC EVENT OCCURRED. (PHOTO COURTESY - MARCONI INTERNATIONAL MARINE, LTD. )



1901 - EQUIPMENT THAT SENT THE FIRST WIRELESS SIGNAL ACROSS THE ATLANTIC

SEEN HERE IS THE TRANSMITTER OF THE MARCONI STATION AT POLDHU, CORNWALL, FROM WHERE THE THREE-DOT LETTER S WAS SENT ACROSS THE ATLANTIC ON DEC. 12 1901. THE RECEIVING STATION, WITH MARCONI PERSONALLY IN COMMAND WAS SITUATED AT SIGNAL HILL, NEWFOUNDLAND. (PHOTO COURTESY MARCONI INTERNATIONAL MARINE, LTD.)



# PILGRIMAGE TO POLDHU 1979

## AS REPORTED BY

### FRANK HOGAN



THIS IS THE MARCONI MONUMENT LOOKING BACK TOWARD THE POLDHU HOTEL, SHOWN IN BACKGROUND BEYOND A LOW GRASS AND VINE COVERED DIKE. THE WORDING ON THE PLAQUE THAT SHOWS IN THE BOOKLET "CORNWALLS CONQUEST OF THE AIR" PAGE 17. YOU ARE LOOKING NORTH.

Dear Bill:

Here is a "Log" on my recent trip to England. You will be especially interested in our visit to Poldhu where wireless history was made back in 1903. I have included quite a number of pictures - I hope some of them will show up fairly well although taken under poor light conditions.

Barbara, the XYL, and I had a great 21 day trip to London, Devon, and Cornwall. The PAA flight #124 over and #125 back non-stop SFO to London and return taking approximately 9 plus hours was unbelievable, especially the all daylight flight home racing the sun. We had a grand look down on a big iceberg floating off the east coast of Iceland, Iceland itself, Greenland, and Baffin Island. The flight crew didn't give the specific track on the return flight but reckon we were passing over the southern parts of each of the above at about 40,000 feet. There were enough breaks in the cloud deck below us to get some great views and must agree with retired PAA Capt Bob Zentner, W6UMP, SQWP #827-P, these were one of the prettiest sights I have ever seen from the air.

The main reason for the trip was for Barbara to visit for the first time her 40 plus year pen pal, Jean Brewer, who lives in Torquay, Devon. Jean took us in for about a week and drove us around plus the trip down to Poldhu and Land's End in Cornwall.

October 2, 1979 we arrived at the old and still in business Poldhu Hotel about mid-day, and the folks there were most gracious and helpful. The Poldhu Hotel porter, L.J. Edwards, brought the Hotel Guest register which dated back to 1898 to me to take the enclosed photographs. I had the two photos of the Marconi signatures enlarged to 5 x 7" hoping the signatures would show up better if you wish to use them in your publications, Bill. The article "Guglielmo Slept Here" in your PQ-17 edition of the SPARKS JOURNAL Vol. 2, No. 4 mentions Marconi's assistants Kemp, Paget, and Dr. Ambrose Fleming as probably having stayed at the Poldhu Hotel. The large picture with Mrs. Marconi's signature along with J.A. Fleming, Kemp and several others of the Marconi Wireless Telegraph Co. of Threadneedle St. London does appear, but the date on the page was not distinct. There are two larger photos and eight smaller.

I hope you receive permission from the publishers of the booklet "Cornwalls Conquest of the Air" to use material therein; that would be great.

Mr. Edwards is not a radio amateur, but does go in for radio controlled model airplanes. He would like to receive a copy of your SPARKS JOURNAL should you have another Poldhu Marconi sight write-up in the future. His address is c/o Poldhu Hotel Hotel Porter, Mullion, South Cornwall, England. I would be willing to pay the postal costs for the mailing.

Previously read articles made no mention of Poldhu Cove Beach just below the front of the Hotel facing the ocean. It is very nice - we ate our picnic lunch there on the way north to Penzance via St. Michael's Mount, most interesting and beautiful place.

I should add the Poldhu Hotel has an inner hall wall display of Marconi station pictures and etc. dedicated to his memory, did not get photo of it though.

Hoping this is of use Bill.

*S/ '79'*

Frank Hogan, 2052-P

3704 Hollister Avenue  
Carmichael, CA 95608



SMALLER SLAB IN FOREGROUND APPARENTLY THE BASE FOR THE HORSEBY-ACKROYD OIL ENGINE DRIVING A MATHER AND PLATT 2000 VOLT 50 CYCLE ALTERNATOR. (THIS INFORMATION FROM THE CORNISH RADIO AMATEUR CLUB (GB3MSA) QSL CARD 75th ANNIVERSARY OF THE FIRST TWO-WAY CONTACT BETWEEN USA AND EUROPE.) Courtesy LES MAYS (G2CWR- PAIGNTON-DEVON)



THIS FLOOR SLAB PROBABLY THE TRANSMITTER AND EQUIPMENT BUILDING WITH THE CABLE TROUGHS SHOWING. CREEPING BLACKBERRY VINES IN THE FOREGROUND AND REAR.



ONLY REMAINS OF ANY STANDING WALL AT THE MARCONI WIRELESS STATION SITE. APX 2 FEET TALL AT THE MOST. OTHER BUILDING SLABS IN BACKGROUND.



THIS IS A DIM PICTURE OF FRANK HOGAN BESIDE THE MARCONI MONUMENT (LOOKING TOWARD LANDS END). FRANK'S REMARKS: ... "LIL COOL ON THE OLE BALDE HEAD"!!!



# Historical Record of Shipping

## 300-Years Before Wireless Invented

### Continued from Back Page

Very early it was decreed that sailors and common seamen should be examined before enlisting to determine their fitness for the duties at sea. This proved to be necessary for the reason that often as many as half of those listed as sailors on the galleons were not sailors at all, but persons who had secured the position through favoritism in order to gain passage, and to share in a profitable trade. And natives from the interior, ignorant of the art of sailing, were often enrolled and shipped by the factor.

The pay received by sailors in 1635 was reported to be 150 pesos per year and 30 gantas of cleaned rice per month; Spanish common seamen received 100 pesos and 30 gantas of rice; Indian common seamen received 48 pesos and 15 gantas of rice. In 1637 wages were higher, sailors receiving 175 pesos and common seamen 60 and one-half pesos. Gemelli Careri in 1697 gave sailors' wages as 350 pieces of eight for voyage from Manila to Acapulco and return. Seventy-five pieces of eight were paid at Cavite as advance pay, which was customary; but to prevent desertion at Acapulco, and insure return to Manila, the remaining 275 pieces of eight were not paid until the return, for as Gemelli Careri said, "if they had half, very few would return to the Philippine Islands for the rest."

But it was found that wages alone were inadequate. A royal decree had declared that seamen should carry no more boxes or clothing than indispensably necessary, for the reason that they unduly cumbered the ships. In the boxes of course was merchandise carried as a private investment. But officials in the Philippines protested that wages were insufficient incentive, that greater zeal and willingness to render loyal service would be secured if the men had a stake in the treasure ships, and that more Spaniards would be brought into the service of the Acapulco trade. Accordingly permission was granted to carry small amounts, the exact amount to be allowed being a bone of contention between Philippine officials, who sought to raise it, and Spanish officials, who sought to lower it.

But even with a fixed rate of wages, and permission to carry goods for investment on his own account, the pay of the sailor was by no means certain. In 1589 one of the Philippine officials wrote to the king of grave evils existing in this matter.

... They should be paid in Nueva Espana as this treasury is too poor. As the money for their wages must be sent, sometimes it is not brought, and at other times it is lost, thereby causing the sailors to die of starvation. Therefore the sailors serve half-heartedly, and desert; and there is great negligence in the dispatch of the fleets.

A decree in accord with the recommendation was promptly issued.

Wages were not paid in money, but by a warrant, or voucher, which was supposed to be convertible into cash—and was, but not when presented by the sailor.

In 1621 the archbishop of Manila wrote to the king as follows:

One could not believe the injury that is done to soldiers and sailors, and to all the wage-earners, by not paying the vouchers earned by their labor and sweat; and on the other hand, by buying these for much less than their face value. For, being rendered desperate, they sell vouchers valued at one thousand pesos for one hundred, and the lamentable thing is that, if they did not sell them, they would never be paid. Scarcely have they sold the vouchers when they are immediately paid, and the purchasers even take the poor wretches to the office of ac-

counts, so they may be present at the payment, and that it may appear justified, by their saying that they did it of their own accord, for which they give a receipt. As it is the price of blood, and they see that others take that price, it is a grief and sorrow that cries to heaven for redress.

Fifteen years later this flagrant evil was unabated, and corruption continued to hold full sway. In 1636 another letter to the king again recited the abuse as practiced by corrupt officials.

As for those poor men, they have not been paid in one, three, ten, or fifteen years. They sell their warrants during such times for the fourth, fifth, or sixth part of their face value; and many have been paid at one hundred pesos for one thousand. The warrants are bought by the servants of the auditors, royal officials, governors, and other ministers, and to them is paid the face value.

Besides the abuses which have been mentioned, the sailors were subjected to petty annoyances by the collectors of port dues at Acapulco, who, when examining the former's small chests and wretched belongings, "practice many extortions on them so that many refuse to return."

Discipline aboard ship was enforced with severity, though probably the Spanish ships of those days were not worse than aboard many American ships within the memory of men still living. Gambling, swearing and blasphemy, and immorality were all punishable, as of course mutiny, desertion, quarreling, and insubordination. Putting men in the bilboes, ducking them from the yard arm, keel-hauling, and the lash, were well known forms of inflicting punishment. When the sailors and seamen sought release from discipline by going ashore at Acapulco, and behaved as they pleased, the king extended the jurisdiction of the ship's officers to cover the time while they were in port.

Life aboard ship could not have been attractive, except for the glamor which has always surrounded going to sea. Ships in those days were the antithesis of cleanliness. Rats and vermin swarmed over the vessel. The most vivid account of the conditions comes from the experience and pen of Gemelli Careri.

... the galeon is never clear of an universal raging itch, as an addition to all other miseries ... the ship swarms with little vermine, the Spaniards call Gorgojos, bred in the basket; so swift that they in a short time not only run over cabins, beds, and the very dishes the men eat on, but insensibly fasten upon the body. ... there are several other sorts of vermin of sundry colours, that suck the blood.

Besides these discomforts, he, like others, complains of the "terrible shocks from side to side, caused by the furious beating of the waves." The galleons were always overlaid with merchandise, and the decks were crowded with the chests of the sailors, hen-coops, and bales of goods. The very narrowness of the quarters was distressing, and on one galleon at least, led to civil war which was stopped only through the efforts of the fathers who were aboard.

Provision for rations aboard ship was most unsystematic and improperly attended to. In the first place, those who furnished the rations for the crew often put in food of poor quality. Then also, the passengers and religious, who were often numerous, consumed food provided for the crew. Stowaways were an additional drain upon provisions. So also were the slaves of the passengers and sailors, who in addition stole whatever food they could lay hands upon; for even the slaves who aided the sailors in their necessities were not provided for by the king's allowance of food and water. For these reasons the sailors had to spend their wages buying provisions for themselves and their slaves. This was often the cause of overloading the ships, and was responsible for failure to carry the proper kinds of food, because of which the Indian common seamen suffered most, since they were less used to provide for themselves than the Spanish sailors. The Indians were even permitted to die of hunger and thirst aboard for lack of adequate provision and care. The various messes aboard stocked themselves as best they could. Swine, hens, fruit, and an abundance of greens were put on the deck until the ship looked like a floating garden.

But these never lasted the entire voyage. If fish could be caught en route the passengers and crew were fortunate, for the food became corrupted, and the water gave out unless the supply could be replenished from the rainfall.

Gemelli Careri, who traveled as a cabin passenger, gives the most graphic account of the hardships and fare aboard the galleon. Eating at the boatswain's mess, he began with fresh fowl, but ere long he found himself eating the king's allowance of rations to the men, of which he gives us a description.



... At last he depriv'd me of the satisfaction of gnawing a good basket, because he would spend no more of his own, but laid the king's allowance on the table; in every mouthful whereof there went down abundance of maggots and Gorgojos chew'd and bruised. On fish days the common diet was old rank fish boil'd in fair water and salt; at noon we had Mongos, something like kidney beans, in which there were so many maggots, that they swam at the top of the broth, and the quantity was so great, that besides the loathing they caus'd, I doubted whether the dinner was fish or flesh. This bitter fare was sweeten'd after dinner with a little water and sugar; yet the allowance was but a small cocoa shell full, which rather increased than quenched the drought. Providence reliev'd us for a month with sharks and Cachorretas the seamen caught, which, either boil'd or broil'd were come comfort. Yet he is to be pity'd who has another at his table; for the tediousness of the voyage is the cause of all these hardships. 'Tis certain, they that take this upon them, lay out thousands of pieces of eight in making necessary provision of flesh, fowl, fish, basket, rice, sweetmeats, chocolate, and other things; and the quantity is so great, that during the whole voyage, they never fail of sweetmeats at table, and chocolate twice a day, of which last the sailors and grumets make as great a consumption, as the richest.

On solemn feast days an extra allowance of rations was served out.

An interesting custom, related by Gemelli Careri, of the Sailor's Court of Signs (held aboard the galleon when the first signs of approach of land appeared), depicts a happier side to the life of the sailors.

... A canopy being set up for the sailors court of Senas, or signs, after dinner the two Oydores or judges and the president took their seats, being clad after a ridiculous manner. They began with the captain of the galleon, chief pilot, ... and other officers of the ship; and after them proceeded to the trial of the passengers. The clerk read every man's indictment, and then the judges pass'd sentence of death, which was immediately bought off with money, chocolate, sugar, basket, flesh, sweetmeats, wine and the like.

These payments seem to have satisfied a turbulent and not too well fed crew, who, were they not appeased, were ready to inflict the kind of punishments with which they were most familiar.

... The best of it was, that he who did not pay immediately, or give good security, was laid on with a rope's end at the least sign given by the president-tarpaulin. I was told a passenger was once kill'd aboard a galleon, by keelhauling him; for no words or authority can check or persuade a whole ship's crew. ... The sport lasted till night, and then all the fines were divided among the sailors and grumets, according to custom.

This picture of the Court of Signs, and others of amusements for crew and passengers—cockfighting, plays, dancing, and other entertainments—show that there was a lighter side to the life of the sailor aboard ship. But from the viewpoint of today, the balance seems to have been all the other way.

His very calling was hazardous in the extreme. It was not at all uncommon for men to be washed overboard and drowned by the huge waves which at times swept over, and well-nigh submerged the small craft of that day. More than one galleon was wrecked and went down, or was driven back to Manila by storms with half the crew lost. Then, too, the galleons often sailed poorly repaired through the fault of the shore

( CONTINUED ON PAGE 27 )





## THE GALLEONS FROM P. 26

workers. Pirates of all nations were active in preying upon such rich treasure ships, and the sailors and seamen might at any time be called upon to defend the ship with their lives against capture by these buccanniers or sea-dogs.

A worse enemy of the seamen, particularly the Indians, was the severe cold encountered on the voyage. They came from a hot climate, and when, without protection, they were exposed to the severities of weather in the higher altitudes, they died in large numbers. They used to come aboard the galleon without clothes, and until the king provided clothing to be issued them as a protection, they had nothing to shelter them. They had no quarters other than the deck, often. Navarrete, describing the situation aboard his ship which was not "convenient nor big enough to celebrate that high mystery" [mass], said: "We had hardly room to stand. No body could live under deck, it was so full of provisions and commodities. All men lay exposed to the sun and air."

So it happened that many were frozen to death, or died of exposure. The lot of the Indian seamen was especially cruel. As Los Rios said, they were "treated like dogs."

... They are embarked without clothes to protect them against the cold, so that when each new dawn comes there are three or four dead men. ... besides they are treated inhumanly and are not given the necessities of life, but are killed with hunger and thirst. If he were to tell in detail the evil that is done to them, it would fill many pages.

The Indians, however, were not the only victims of the cold, for the sudden changes of climate, and exposure to wind and rain worked great hardship among all on board, and was the cause of much sickness and death. The treatment of the sick was shamefully neglectful. Gemelli Careri relates the callousness of the captain of his galleon, whose personal profits from the single trip were, according to his own estimate, 25,000 or 30,000 pieces of eight.

... Abundance of poor sailors fell sick, being expos'd to the continual rains, cold, and other hardships of the season; yet they were not allow'd to taste of the good basket, rice, fowls, Spanish bread and sweetmeats put into the custody of the master by the king's order, to be distributed among the sick; for the honest master spent all at his own table.

But the worst danger was from disease. For three centuries European navigators in the New World were afflicted with the scourge of scurvy and beri-beri, especially the former. It was Captain James Cook, the Englishman, who first proved the use of lime juice as an anti-scorbutic, and thus removed one of the greatest hindrances to exploration and maritime commerce. The Spanish navigators paid especially heavy toll to these diseases, the cause of which was lack of fresh provisions, or food containing vitamins. Again we turn to Gemelli Careri for a description of these perils.

... There are two dangerous diseases in this voyage, more especially as they draw near the coast of America; one is the afore-said Berben [beri-beri], which swells the body, and makes the patient die talking: The other is call'd the Dutch disease, which makes all the mouth sore, putrifies the gums and makes the teeth drop out. The best remedy against it, is going ashore. This is no other, but the sea-scurvy.

The proportion of deaths among the crew and passengers was often enormous. For instance on one vessel with 400 persons aboard, 208 died before Acapulco was reached. On another, the San Nicolas, 330 died. A voyage on which only three persons died was regarded as most "propitious." Probably extremely few, if indeed any at all, of the voyages from Manila to America were made without suffering to greater or less degree from the ravages of these diseases. And on most trips, the sufferings were terrible, and the death list very long.

Small wonder then, that from such a voyage, and such conditions, the survivors frequently preferred to desert at Acapulco (or California, when the galleon stopped there), rather than return to the Philippines. Wages were paid only in the Philippines, and bonds were required of sailors and seamen in the endeavor to check the large number of desertions in Mexico.

Such were the conditions which prevailed among seamen engaged in Spanish commerce across the Pacific, a trade which flourished for over three centuries.

## Sea Longings

Your mystic singing charms my ears,  
Your flowing hair beguiles,  
I know of only one escape,  
Goddess of countless wiles.

Your green seaweed ensnares my heart,  
Your white gulls haunt my dreams,  
And like the gates of paradise,  
Your far horizon gleams.

I shall escape by fleeing from  
My longing on the beach,  
And sailing west into the wind,  
Beyond my longing's reach.

--Walden Garratt



## Liberia's right to seize US ships

By William Woodward

Liberia is the largest shipping country in history; its flag flies over more than one quarter of the world's shipping tonnage. Almost all of its vessels are owned by foreigners, about half by Americans.

Liberia has the right — under international maritime law — to requisition each and every one of its ships. If this step is taken, the United States will be thrust into an imperialist-colonial type controversy the like of which we have not seen since Mexico's 1938 decision to nationalize its oil.

Liberia has been a "flag of convenience" haven for the oil industry for 30 years. Its shipping and corporation laws, authored and administered by Americans, allow the tanker owners of Western nations to avoid the taxes, labor costs, and pollution-control regulations they would otherwise face. Liberia has been satisfied with its role for three decades: Why change now?

Liberia's young government, headed by 28-year-old Master Sergeant Samuel K. Doe, has already proven itself oblivious to world opinion. It has executed publicly without trial the largely innocent leaders and camp followers of the country's past; it has entered into discussions with the dictator of Libya, Colonel Qaddafi; it is a government with little claim to legitimacy beyond that provided by force; it is unpredictable in its policies, and obscure in political philosophy.

In 1948 America created Liberia's shipping statutes in order to silence oil-industry complaints about high labor costs, while supposedly preserving effective US control over American-owned tankers for times of war or national emergency. Liberia was the perfect client state, in an era when we still had client states. It was ruled by the descendants of American slaves; it contained the last remnant of the American Whig Party; its only two

ports were named after US Presidents Monroe and Buchanan; it was described by an oil company official as "the godson of the United States." Until the coup this spring, its government had been stable for 133 years.

But the time of client states is past. Liberia garners little from the current flag-of-convenience arrangement. Its \$11 million income from ship registration wouldn't even purchase the cargo of a single oil tanker. The leaders of the UN Conference on Trade and Development have called for an end to flag-of-convenience operations, arguing that ships must be owned by nationals of the flag they fly, and that developing countries deserve a far greater share of oil tanker ownership. For at least 20 years, Liberia has publicly claimed the right to requisition its flagships. The US has never disputed this right; instead we have assumed it would not be exercised.

But requisition would clearly be legal. It would accord with current thinking about flag-of-convenience shipping in the third world. It would almost certainly have nationalist appeal within Liberia, thus strengthening the new government. And it would put Liberia in an excellent position to bargain for a new and far more favorable modus vivendi with the oil industry.



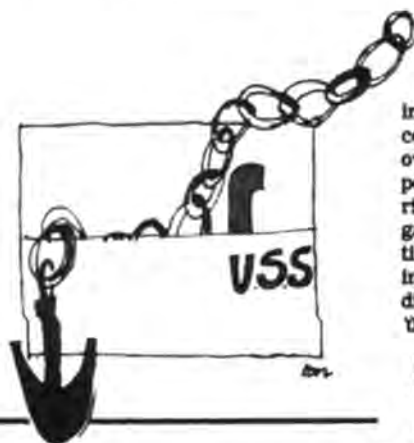
It is argued that Liberia would be unable to enforce a nationalization decree. The captains of Liberia's flag vessels, however, would be legally obliged to obey — at the risk of their licenses and careers — any law of their flag state. Seven years ago Liberia successfully prohibited its ships from supplying oil to Israel during the Yom Kippur war. Liberia would have the right to ask enforcement assistance from any coastal country having a Liberian ship in its territorial waters, and could even — if it so chose — deputize the Soviet Navy to enforce its statutes on the high seas.

Are these scenarios farfetched? Perhaps. But the US has been victimized by much stranger occurrences in recent years. Liberia has some potent economic and political reasons to consider requisitioning its fleet, and it has enormous legal flexibility in this regard. The US has never protected its right to US-owned Liberian ships by treaty or any other means, and, as a result, we are now extremely vulnerable.

American-owned oil tankers are a vital economic and military resource, which we cannot afford to lose. And yet we, unlike the Soviet Union or any other significant world power, have seen fit — in serving the short-term financial interests of our own oil industry — to grant control of this resource to a third party; a party now undergoing the shock of revolutionary change.

If our tankers soon become someone else's tankers, if the flag-of-convenience scheme boomerangs like so many other penny wise, pound foolish plans have done in the past, we will have to blame only the arrogance and complacency — unaltered for 30 years in an otherwise volatile world — of the US government.

William Woodward is a former legislative assistant to US Rep. Gerry Studds.



What could the US do in response? We designed Liberia's shipping laws, and voluntarily put our vessels under Liberia's control. We have been the single strongest advocate of flag-state maritime rights in world shipping circles. Under the law, we could not reassert control or place our flag over US-owned Liberian ships without the permission of Liberia. We would have the right to seek compensation, but could not legally use force to block the Liberian initiative. If we did use force, we would be shattering international law and risking massive diplomatic damage in our relations with the third world.

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Navy Radio : Hardacker, Fm.P-22



ditional Radiomen, and several Command circuits. Traffic was sent from the various Command ships, each with a specific call which was not a ship call. Traffic could also be addressed to the various ships in the command, e.g., NIFT NAKL NXXX NAGM v M8J.

● The Huff-Duff was a type of high-frequency direction finder with scope readout used by escort ships in conveying to triangulate on signals from U-boats and U-boat wolfpacks in the Atlantic, in WW2. An escort group of ships with such equipment in three or more ships was known as being Huff-Duff equipped. An operational convoy with three or more of the equipments in three or more escort ships was known as a Huff-Duff equipped convoy.

● ECM=electronic counter measures=jamming. ECCM=electronic counter-counter measures=something done to overcome the effects of jamming, either technical or operational or perhaps both.

● Spoofing=usually a type of ECCM. Something done to make the enemy think he was receiving valid traffic while in reality he was receiving fake information. This could be operational and/or technical. There was also masses of dummy-coded traffic sent to someplace or some ship or Flag aboard some ship; there could be requests for many repeats on messages over circuits that the enemy was jamming, while in reality the circuit had been shifted to another frequency. And so on.

● Crypto=Coding or uncoding messages. Crypto Board=A group of personnel which codes and decodes traffic.

● Crypto Machine=A machine with a keyboard like a typewriter that codes and decodes messages. These are usually received in five-letter code groups. Command ships carried a higher classification of crypto equipment than other ships. As a general rule only the Escort Commander in a convoy, the Crypto Board and machine aboard the ship he rode in, could unscramble message traffic of certain content to the convoy.

-D.C.H.

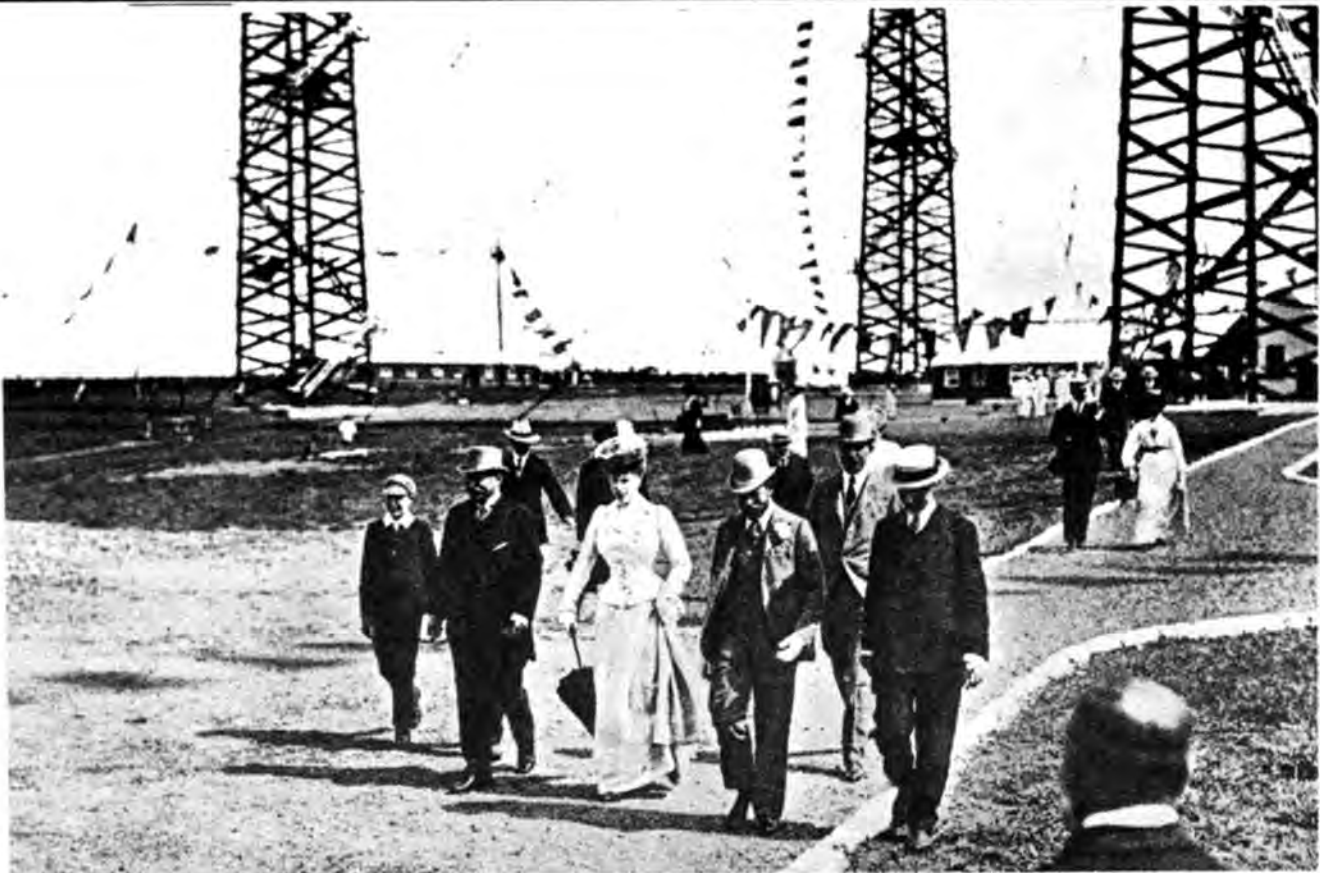
Poldhu Visit Hogan—From P-25



THIS PICTURE SUPPLIED BY THE POLDHU HOTEL IS OF MRS MARCONI CIRCA 1978 WHEN SHE VISITED THE HOTEL DURING THE 1978 ANNIVERSARY. G. MARCONI'S PICTURE IS ON THE WALL AT HER RIGHT.



MEMBER FRANK HOGAN WAS PERMITTED TO TAKE A PICTURE OF THE POLDHU'S HOTEL GUEST BOOK . THIS IS A PICTURE OF G. MARCONI'S SIGNATURE UNDER THE DATE OF JUNE 6 1901. HE ALSO NOTED THE SIGNATURE OF MRS. MARCONI WHO SIGNED THE REGISTER IN 1978 AT THE MARCONI ANNIVERSARY CELEBRATION.



FIRST PILGRIMAGE TO SHRINE OF COMMUNICATIONS RECORDED

THIS PHOTO, COURTESY MARCONI INTERNATIONAL MARINE, LTD., PICTURES THEIR MAJESTIES, KING GEORGE V AND QUEEN MARY VISITING THE POLDHU STATION ON JUNE 18 1903 WHEN THEY WERE PRINCE AND PRINCESSES OF WALES. THIS IS PERHAPS THE FIRST PICTURE EVER OF WORLD RENOWN PERSONAGES VISITING THE SHRINE AND BIRTHPLACE OF COMMERCIAL WIRELESS COMMUNICATIONS.



# Early Days With The "Great White Fleet" & Tropical Radio Telegraph Company



BY—IVAN A. LEO—1046-P

The Society has many members who worked for The United Fruit Company and its subsidiary, Tropical Radio Telegraph Co. (TRT) so I would like to pass along some of my experience with this fine organization.

I served as 3rd, 2nd and chief radio operator on several passenger vessels of "The Great White Fleet". I was relief radio operator at the Santa Marta, Col., S.A. TRT station in 1938. Call was HRA. Then transferred to the HOME TRT station at Hingham, Massachusetts.

On Pearl Harbor Day, Dec. 7, 1941 this station came under command and control of the U.S. Naval Intelligence Service. All personnel of the station handled all marine, point to point and landline communications under surveillance of the Intelligence Service officers. This continued until in June of 1942 when all civilian personnel were directed to leave. Several airlines, upon learning of the availability of these personnel, were quick to interview and hire those of us who desired to go into airline radio service. I joined PAA in flight operations and radio operator at the Dinner Key WKDL, Miami, FL sea plane base and later at PAA operations at the 36th Street Miami International Airport.

The entire radio facility of PAA after four years was absorbed by CAA (now FAA) and I automatically became a civil service employee serving as radio point to point CW operator. This was in the Miami Overseas Everglades station WBR.

While at WKDL during the WW-2 years, I worked radio CW with a former fellow employee of TRT. This was W.D. (Don) Thomas who was radio operator and navigator on military planes being ferried to Europe via Brazil. Don as CW long range operator for a group of five aircraft would maintain communication with me at WKDL (PAA-Miami) as far as Port of Spain, Trinidad. Don, a fellow SOWP member, had

an article in a recent SOWP that was very interesting. However, having known Don over a period of many years, I know he has had such a life of varied, interesting experiences that he could easily write a book. Don still lives an interesting and exciting life in Coral Gables, FL with his several hobbies. I have lost contact with all but a very few of the TRT operators. Herb Gleed, a great "BANANA BOAT" operator is living in Los Angeles. Stanley Wade lives in Arizona, however I do not know his address. I hope he will see this item and drop me a line sometime.

David Trop, also a TRT and PAA operator, lives near Rockland, Mass. His father and Guy Entwistle operated the Massachusetts Radio & Telegraph School at Boston, Mass. As a "landlubber" from Iowa, I saw their school ad in a magazine and that was the beginning of my career in radio. Through that school I was able to pass the exams for my 2nd class radiotelegraph and 1st class radiotelephone licenses. I never used the 'phone' license, but after a year of service received my 1st class radiotelegraph license that I retained for many years. Finally it expired from lack of continued service. My five or six expired CW licenses are nice souvenirs of some of my best and more exciting years.

I will always cherish the several years spent at sea on passenger boats of the good and great United Fruit Co. This was, in my opinion, a very good company that endeavored to treat their employees well, especially radio operators of their subsidiary Tropical Radio Telegraph Co.

A standing, written order to UFCO boat captains was that "all radio operators, to promote and generate, passenger radio toll business, were allowed to mingle and associate with passengers, except to the point of sleeping with them". Such practice was frowned upon by the vessel's Master!!! The temptations were many though since the "Fruit" boats carried many beautiful school teachers along with the other nice passengers, especially during the summer vacation months.

Passengers, being denied fresh water for rinsing when coming out of the salt water pool on the return voyage, coined the following quite appropriate saying "EVERY BANANA A GUEST EVERY PASSENGER A PEST". This was because the fresh water was used to spray the bananas on the northbound journey. Thanks for the pleasant memories, UFCO, TRT, PAA and CAA/FAA.

Ivan A. Leo, 1046-P, WB4ZYM

## Wireless Saves SS. Springfield "KUTR" Crossing The Columbia River Bar

BY—FREDERIC H. STEPHENS—2967-SGP

On or about the end of September 1921 the S.S. Oneonta, 2,500 horse power, triple expansion engine, had left her berth at Astoria, Oregon to cross out over the Columbia River bar to meet an incoming ship; put a qualified bar pilot on board and convoy her in across the bar for her trip up river to Portland. Since this was shortly after the ending of World War One, shipping was very heavy and usually ran as high as 150 ships crossing the bar per month. So, as 'Sparks' and on my first commercial assignment, I was truly busy.

On this particular day there was a heavy sea running with strong southeast wind and the bar between North Spit and Peacock Spit was nothing but seething white foam. As we started to make our outward crossing, as usual I always maintained continuous watch. I heard a very loud SOS from the S.S. Springfield who was coming down river and attempting to cross the bar. I immediately answered and she said that because of the wind and heavy seas she was unable to maintain her heading.

I whistled the bridge and gave "The Old Man" the story. He told me to tell them, "To hold on the best possible and be ready to take a line. That we were coming back and would try to pull them out before they grounded." He also told me, "Keep contact with them constantly and standby to relay orders." He added, "And Sparks, make yourself and everything as secure as possible. This is going to be rough going." For the next half hour I was too busy to realize how rough it was. Although I was aware that we struck bottom three times. However, the old reliable one half KW Kilborn-Clark, quenched Spark transmitter and other com gear continued to stay put and functioned normally. The radio shack (?) was located at the very bottom of the hold, forward below the galley. Probably designed to be the paint locker until wireless came along. Anyway, it was below water-line and no port holes. So, I could only guess what was going on by the messages to and from the S.S. Springfield. After what seemed an hour or more the engine speed was cut back and we stopped banging and rolling so violently. The bridge called and the Captain said, "Sparks, how are you down there? We are sick as dogs up here. Come up and see what happened."

I first noticed that we were up the river away from the seething white water of the bar and the Springfield was safely at anchor on the north side of the river. It was obvious, even to me, that she was sitting high, without ballast, and should never have tried to cross the bar in such foul weather. Our ship took quite a beating. The wheel boat and the cold storage reefer were gone. All glass windows in the wheel house were smashed, and the quartermaster was cut by flying splinters in numerous places. The door between the wheel house and the Captain's cabin immediately aft was smashed as well as the port and starboard doors of his cabin and all of his personal belongings were probably a tangled mass in foam crossing the bar. The aft end of the radio antenna was trailing over the port side. I don't know when it broke away, but communications were not interrupted... and because of wireless, a good skipper and competent crew, the S.S. Springfield was saved.





# SOS DE MFA-TORPEDOED

## .... SINKING FAST....

( Continued from Page 3 )

Thomson Smith picked up the SOS from the Lusitania. The appeal was followed by the words "Big list. Come at once." Captain Charles Harwood, commander of the Narragansett, ordered the vessel to increase her speed and proceed to the rescue. She was nine miles from the Lusitania when a submarine appeared about 200 yards away from the tanker. A torpedo was fired but it passed astern of the Narragansett, missing her by about thirty feet. Captain Harwood then suspected that the SOS from the Lusitania was a hoax and made haste to steam out of the submarine zone.

The Leyland Line steamship Etonian also received the SOS from the Lusitania, being about forty-two miles away from the sinking ship at the time. Captain Wood, her commander, said that soon afterward the steamship City of Exeter was sighted and then he caught sight of the periscope of a submarine between the two craft. He ordered full speed ahead and the submarine was outdistanced. No sooner had he eluded the underwater craft than another appeared and the Etonian was compelled to show her heels to the latter also. While the steamship was dodging the submarines she received a wireless message from the Narragansett, conveying a warning not to go to the rescue of the Lusitania.

Guglielmo Marconi said that the Lusitania had been chased by a submarine on her previous west-bound voyage when he was a passenger. Only a few persons were informed of the occurrence. The periscope of a submarine was sighted off Fastnet, near Cape Clear, on April 18, but the liner sped away before the underwater craft could get near enough to launch a torpedo at her.

Leith and McCormick boarded the Lusitania when she left England on her last voyage to New York. Operator W. C. Ryan had expected to be detailed as first operator, but he was replaced by Leith a short time before the vessel left. Both Leith and McCormick were in the service of the English Marconi Company, the former acting as traveling inspector. Leith was in the service for approximately eight years. McCormick has been in the service for about two years.

--THE WIRELESS AGE, June, 1915

## "QSL" CARDS AVAILABLE

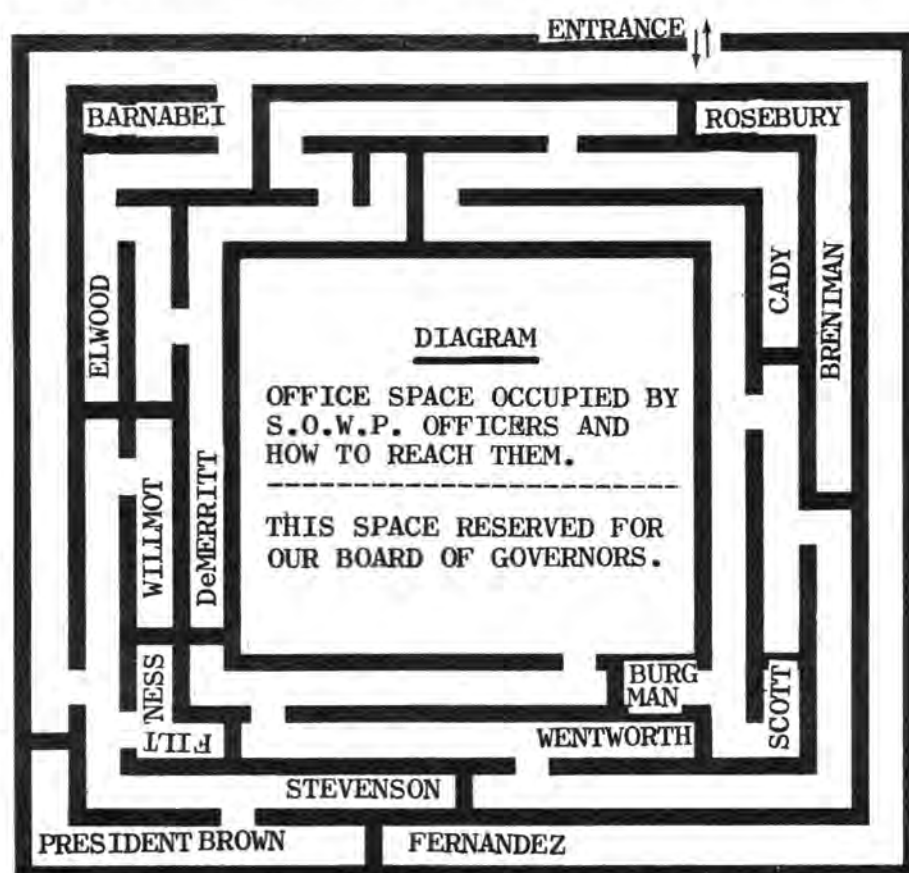
### 'RUSPRINT' AGREES TO FURNISH SOWP FORMAT

WE ARE HAPPY TO INFORM ALL OF OUR AMATEUR MEMBERS THAT WE HAVE FINALIZED AN AGREEMENT WITH 'RUSPRINT' OF K.C. MO. TO FURNISH QSL CARDS WITH THE SOWP LOGO AND IN THE SAME FORMAT AS PREVIOUSLY FURNISHED BY THE SOCIETY.

THE DEMAND FOR CARDS HAS GROWN SO GREAT THAT IT TOOK TOO MUCH OF OUR TIME TO PROCESS ORDERS AND SHIP. OTHER PROGRAMS WERE SUFFERING AS A RESULT, HENCE THE DECISION TO ELIMINATE THIS WORKLOAD. SINCE RUSPRINT WILL FURNISH THE SAME CARD FORMERLY HANDLED BY US, AND SINCE THEY HAVE BEEN IN THE BUSINESS FOR OVER 25 YEARS - RECOMMENDED VERY HIGHLY BY SOME OF OUR MEMBERS WHO FORMERLY PATRONIZED THEM, WE FELT THAT SOWP MEMBERS, HQ., AND RUSPRINT WOULD ALL BENEFIT FROM THE ARRANGEMENT.

THE ONLY SLIGHT DIFFERENCE IN CARDS RUSPRINT WILL FURNISH IS THAT THEY DO NOT HAVE 'OUTLINE TYPE' AVAILABLE, HENCE ALL CARDS WILL BE SOLID LETTERS OR FIGURES. OUR FORMER STYLE CARD #1 WILL BECOME THEIR CATALOGUE NO. 1001 AND OUR STYLE #2 WILL BE THEIR # 1002 WHEN YOU ORDER. THEY WILL START TAKING ORDERS IN SEPT. AND FURNISHING CARDS BY SEPT.30 1980. DETAILS ON PRICES ETC. WILL BE FURNISHED BY RUSPRINT- PLEASE MENTION YOU ARE A SOCIETY MEMBER AND GIVE YOUR SERIAL NUMBER. CHECKS FOR CARDS AND ALL CORRESPONDENCE INCIDENTAL TO ORDERS SHOULD BE TO RUSPRINT DIRECT. THEIR QTH IS: P.O. BOX 7575, NORTH KANSAS CITY, MO. 64116 THEIR PRICES INCLUDE DELIVERY, HOWEVER THEY VARY A BIT FROM OURS HENCE BE SURE TO CONTACT THEM FIRST. - 30 -

## S.O.W.P. Headquarter Chart (Classified)



This is the new 'imaginary' layout of S.O.W.P. Headquarters at 73 Ozone Way. One will note that great thought has gone into the engineering of these new quarters and to provide the logical placement of offices for those who will staff Society positions the next two years.

First of course is our BOARD OF GOVERNORS which will be cloistered in the center hall. It may be noted that it will be difficult to disturb them while in conference.

Our President has been provided with the ONLY outside corner room available with exposure to the South and East. This overlooks the harbor with its teeming ship traffic while in the distance one sees the 'Hi-power' towers once used by one of the nation's foremost wireless operators. A superb view President Brown. The next best (also outside) room was reserved for our Senior Vice President "Pete" Fernandez, located as one will note on the SOUTH side of the building. While not preoccupied with SOWP business "Pete" can relax in his lazy-boy and look south which will bring up visions of a forgotten world 'you all' will hardly think about. He knows the South will rise again but he hasn't quite made up his mind to barter peanuts for the DY dollar.

It will be realitively easy to find our Awards Chairman Allen Barnabei or John Elwood. They are just down the hall a piece from the entrance.

While the labyrinth may be confusing at first, we think members will get used to finding their way by the time another election rolls around.

It may be noted that we had to place our Canadian Director in a corner office. This allows him to work in two directions at once. Bill Filtness is the BEST two-way man we have. (Canadian and American) He has probably attended more meetings of American Chapters than any one member - this in addition to attending almost all of those held in Canada.

It may be noted that YE EDITOR and his trusty assistant may be a bit more difficult to reach than most offices. Since they work in an enclosure sans doors, entrance and exit is via a secret tunnel (under the Bay) to the East Shore. This makes it a bit more difficult to disturb them when working and concentrating on coming issues of the Journal, Directory.

It might be noted however that the President and other Key Officers which includes the Treasurer communicate via ESP. The only offices so provided.

This will be the only time we will provide a diagram of the building and its layout, so suggest you memorize it if you feel the need to visit SOWP Headquarters in the future. We hope you find it interesting.





BY WILLIAM A. BRENNAN

## 'CLEARING THE HOOK'

### NEW BANNER HEADING

WE WISH TO THANK KYLE E. THOMPSON ONCE AGAIN FOR FURNISHING THE SOCIETY WITH A "MASTHEAD" FOR THE JOURNAL WHICH IS BEING USED FOR THE FIRST TIME ON THIS ISSUE. KYLE (W6BNJ) SAID WE MAY FIND IT A BIT TOO LARGE AND WAS WORKING ON ANOTHER ONE WHICH MIGHT FIT SPACE BETTER. THANKS KYLE FOR THE TIME, AND CREATIVE ABILITY FURNISHED THE SOCIETY THAT YOU HAVE SO GENEROUSLY FURNISHED DONATED TO THE SOCIETY AND ITS MEMBERS.

### NAA-NSS EDITION

SO MANY RADIO AND WIRELESS MEN HAVE CUT THEIR ELECTRONIC TEETH ON PICKING UP "NAA" WE THOUGHT IT ABOUT TIME THIS WORLD RENOWN STATION SHOULD BE GIVEN FIRST PLACE BILLING. NOT ONLY HAVE OUR MEMBERS RELIED UPON NAA & NSS FOR TIME SIGS WX, PX ETC. BUT MANY HAVE ALSO WORKED AT THE FACILITY. WE DO THANK MEMBER ROBERT KREISINGER (2534-SGP) FOR THE PICTURES AND COPY USED. ALSO JOHN BLACKMAN FOR ACCOMPANYING ARTICLE.

### DUES DELINQUENT ?

A PERIOD OF GRACE HAS BEEN EXTENDED ALL MEMBERS WHO HAVE NOT PAID THEIR 1980 DUES (\$7.50). THIS WILL BE THE LAST JOURNAL WE CAN AFFORD THOSE WHO ARE TARDY AS IT DOES COST MONEY AND A LOT OF IT TO PRINT AND MAIL EACH ISSUE PLUS THE MANY OTHER PUBLICATIONS SCHEDULED. THOSE HARDSHIP CASES ON THE JACK BINNS FUND NEED NOT BE CONCERNED. THIS IS THE LAST APPEAL FOR 1980 DUES. WE DO APPRECIATE YOUR SUPPORT AND GENEROSITY ... IT IS THE CAULKING COMPOUND THAT KEEPS US GOING.

### 1980 WIRELESS REGISTER

A COPY OF THIS PUBLICATION WAS MAILED TO ALL ACTIVE MEMBERS AND SHOULD HAVE ARRIVED BEFORE YOU RECEIVE THE JOURNAL. EVERY EFFORT WAS MADE TO PUT OUT A 100% CORRECT ISSUE BUT WE KNOW ERRORS CREEP IN TO OUR RECORDS. IF YOU FIND ANY IN YOURS, BE SURE TO INFORM US SO THAT CORRECTIONS CAN BE MADE. WE HOPE YOU ENJOY THE REGISTER. A COMPANION CALL-BOOK WILL BE ISSUED LATER THIS YEAR.

### NEW QSL CARD ARRANGEMENTS

THE LAST JOURNAL REPORTED OUR PHASING OUT OUR QSL CARD BUSINESS AS IT WAS ENCROACHING ON TIME REQUIRED FOR PUBLICATIONS AND OTHER ACTIVITIES TO THE POINT ... SOMETHING HAD TO GIVE. WE ARE HAPPY TO REPORT THAT ... RUSPRINT - P.O. BOX 7575, NORTH KANSAS CITY, MO. 64116 ... HAVE AGREED TO TAKE OVER AND FURNISH NEARLY THE SAME CARD AS OUR OLD FORMAT. THEY HAVE BEEN IN BUSINESS OVER 25 YEARS AND COME WELL RECOMMENDED. WE HOPE YOU WILL ORDER SOWP CARDS DIRECT FROM "RUSPRINT" SO OUR QSL CARDS WILL CONTINUE TO "CARRY THE FLAG" OVER THE WORLD.

### STATUS OF PUBLICATIONS

SOWP AMATEUR CALL BOOK (NOV); SPARKS IV (NOV.) WIRELESS ALMANAC NOV. OR DECEMBER) TIME AND CIRCUMSTANCES PERMITTING

### COMING EVENTS OF INTEREST

INLAND SEAS CHAPTER WILL HOLD THEIR FIRST MEETING STARTING ON SEPT. 15th AT RANDAL'S NEW CENTURY INN, SOUTH BEND, INDIANA. ALL IN GREAT LAKES AREA URGED TO CONTACT DIRECTOR PAUL STEVENSON RE: RESERVATIONS. PICKEREL CHAPTER WILL MEET ON OCT. 2nd AT COLT NECK INN, NJ. AL WOOD REPORTS THE JACK BINNS CHAPTER WILL MEET IN SEATTLE SOMETIME DURING OCT.

Like **MEMBERSHIP.**  
It doesn't COST: It PAYS!



## ERRATA—1980 Wireless Register Listings

- PAGE 66 2534-SGP KREISINGER, ROBERT  
Name incorrectly spelled.
- PAGE-32 TA-62 LUNDE, CONRAD O. (W6AZO)  
Correct ZIP CODE to read 90250
- PAGE-46 3274-V SMITH, GENE F. (Gene/Eve) K2DBL  
174-A TAYLOR AVE., E. BRUNSWICK, NJ 08816  
LISTING INADVERTANTLY OMITTED, ADD TO PAGE 46.
- PAGE-31 66-SGP LELAND, WALLACE (K6WL)  
Correct Classification - Should read SGP.

## MEMBER WANT ADS OR QUERIES

### TACKETTE PIN WANTED

I WOULD LIKE TO BUY ONE OF SOWP'S EARLY TACKETTE PINS FOR MY COLLECTION. WRITE: O.F. JUDISCH (2707-SGP) 147 PLEASANT PLACE KEARNY NJ 07032, IF YOU HAVE ONE YOU WOULD PART WITH.

### U.S.S. LEXINGTON (CV-2) NIKM

I WOULD LIKE TO CONTACT OR HAVE NAMES OF SHIP'S RADIO OFFICERS ABOARD THE "LEX" DURING YEARS 1937 THRU 1939. WRITE: CHARLES R. DARRACOTT, JR (3155-P) P.O. BOX 80 WILLIAMSBURG, VA 23185.

### JIM HELIGANTHAL - CARL C. LANGEVIN QTH ?

ANYONE KNOWING WHEREABOUTS QTH WOULD LIKE KNOW. LAST QTH JH IN MILWAUKEE WI, CCL IN NYC. QSP: BILL BRENNAN. C/O SOWP.

### INREQ CHINA CLIPPER R/O 1935-40 - ANYONE KNOW ?

JOHN HLEBOVY, 227 LAS MIRADAS DR. LOS GATOS, CA 95030 WOULD LIKE IFN QTH OF R/Os. (Call COLLECT 408-356-5949)

### (\* INREQ) INFORMATION REQUESTED:

COPY OR "FILL IN" OF A POEM CIRCA 1915 WHICH READ IN PART AS FOLLOWS: "... AND BRASS BOUND LIKE AN EIGHT DAY CLOCK" IT WAS A TAKE-OFF ON OUR SHIPS UNIFORMS. WRITE: FRANK A. SHAEFFER, 249 S. OLD MANOR RD, WICHITA, KS 67218

### WANTED - MEMORABILIA ABOUT TRT & UFCo

HOWARD HIGHT FALK PLANS TO WRITE A BOOK ABOUT T.R.T. & DATA ON UNIFRUCO SHIPS. WANTS PHOTOGRAPHS & MEMORABILIA COVERING SAME. WILL RETURN PHOTOS AND GIVE FREE COPY WHEN PRINTED. HE WOULD ALSO LIKE BUY VINTAGE RECEIVERS (1) RCA8506B AND (2) CR-91 QTH: R.R.3, BOX 364A1, SLIDELL, LA 70458

## SOWP SLOP CHEST ARTIFACTS AVAILABLE

SLOP CHEST PRICES SAME AS LAST JOURNAL: PINS - \$3.50 plus 50¢ INS., DECAL & LABELS \$1; 3 inch Patch \$3.00; BACK PATCH \$7.50 BANNERETTE \$3.50; COASTERS \$2.50 set or 75¢ EA. STATIONERY PRICES SAME AS LAST JOURNAL. CALIF. MEMBERS ADD TAX

## CORRESPONDENCE ON SLOW BELL

AUGUST HAS BEEN A HECTIC MONTH. WE PUT OUT THE REGISTER THE END OF JULY PLUS STATEMENTS FOR 1980 DUES EARLY IN AUGUST AND VERY QRL THRU THE MONTH ON THIS JOURNAL. IF YOUR LETTER WASN'T ANSWERED DURING THE MONTH, PLEASE FORGIVE. WE'LL TRY AND MAKE UP HOWEVER IN SEPT. WE MAY BE AWAY FOR A FEW WEEKS TO VISIT RELATIVES ETC. WE'LL BE BACK AND GIVE IT 'LL COME OCTOBER !



Our Wavelength is Brotherly Love



# Nautical History - Early Days of Shipping

## SPANISH COLONIAL SEAMEN



Model of a tall Spanish galleon

### The Merchant Seaman of the Pacific

By PAUL S. TAYLOR\*

THE discovery of a return route from the Philippines to Mexico by Urdaneta in 1565 made possible for the first time the establishment of a direct trade route across the Pacific Ocean. A regular trade was soon opened between Manila and Spain, by way of Mexico. The Pacific commerce was restricted to one or two annual galleons sailing between Manila and Acapulco, in Mexico. These Manila galleons, as they were called, were fitted out at royal expense and commanded by a royal officer. In size they ranged from small pinks to galleons of 2000 tons, but the more usual size, when there were two annual ships, was not larger than 500 tons, carrying crews averaging about 115 men. The last galleon sailed from Manila in 1811, and returned in 1815. The commerce then fell into private hands, and the ports of San Blas, Guayaquil, and Callao were opened to engage in it.

There was some trade on the Pacific from the earliest days of the conquest, between Mexico and Peru, but it was restricted to an annual galleon, and during some periods, prohibited altogether. The annual supply ships from San Blas to Alta California were not for commercial purposes. Both routes were insignificant in comparison to the Manila-Acapulco line.

The voyage to Manila ordinarily required from seventy-five to ninety days, but the return to Acapulco usually took from seven to nine months, owing to the necessity of sailing northward beyond the belt of trade winds into the westerlies. America was approached in the latitude of Cape Mendocino; then the galleons turned southward, and sailed along the California coast down to Acapulco. By a renowned traveler who made the voyage to Mexico in 1697, it was characterized as

the longest, and most dreadful of any in the world; as well because of the vast ocean to be crossed, being almost one-half of the terraqueous globe, with the wind always a-head; as for the terrible tempests that happen there, one upon the back of another, and for the desperate diseases that seize people, in seven or eight months lying at sea, some times near the line, sometimes cold, sometimes temperate, and sometimes hot, which is enough to destroy a man of steel, much more flesh and blood, which at sea had but indifferent food.

The crews which manned the galleons were composed chiefly of Spaniards and Filipinos (Indians, as they were called). The Spaniards were the sailors, or mariners, corresponding to what we know as able seamen. The Indians were rated as common seamen, corresponding to a lower rating such as our ordinary seamen. Spaniards, too, sometimes sailed as common seamen, but their wage was very much higher than Indian seamen of the same rating. The difference in wage, however, was not based upon difference of ability, for the seamanship of the natives was universally accorded high praise. Viana's description is as follows:

... There is not an Indian in those islands who has not a remarkable inclination for the sea; nor is there at present in all the world a people more agile in manoeuvres on ship board, or who learn so quickly nautical terms and whatever a good mariner ought to know. Their disposition is most humble in the presence of a Spaniard, and they show him great respect; but they can teach many of the Spanish mariners who sail in these seas. ... There is hardly an Indian who has sailed the seas who does not understand the mariner's compass, and therefore on this [Acapulco] trade-route there are some very skilful and dexterous helmsmen. Their disposition is cowardly, but, when placed on a ship, from which they cannot escape, they fight with spirit and courage.

Common seamen could be secured without difficulty, the natives being ready to volunteer in spite of the great risks and hardships of the voyage. But with many of them, shipping as seamen was merely the chance to escape from captivity or worse conditions in the Islands. Once in Mexico they deserted and remained there. With the Spanish sailors, conditions were somewhat different. Appeals were continually sent from Manila to the king, asking for more sailors, who were sent out from Spain to Mexico, where they boarded the galleon for the Philippines. And it was deemed necessary to provide additional payment for sailors, by increasing the allowance of goods carried

as private investment, in order to encourage Spanish seamen to enter the Acapulco trade. In 1724 hardly one-third of the men aboard the galleon were of Spanish birth. Yet notwithstanding the scarcity of Spanish mariners, foreign sailors were barred from the South Sea by royal decree in 1572.

The sailors of the galleons were a rough class of men, discontented, living hard, hazardous lives, and dying in poverty and discomfort. They were variously described by men of the time as "the poor sailors in the continual dangers of their fearful duty," as "a class of men who lack pity, and have too much greed," and as "an ungodly people, guilty of sins of the flesh as well as other offenses, who know naught except to commit offenses against those with whom they deal." Doubtless the descriptions fitted the subject. Los Rios submitted as one of his recommendations to the king

... That slave women be not conveyed in the ships, by which many acts offensive to God will be avoided. Although that is prohibited by your royal decree, and it is also entrusted to the archbishop to place upon them the penalty of excommunication and to punish them, this evil has not been checked; and many sailors—and even others, who should furnish a good example—take slave women and keep them as concubines.

The Indian seamen who deserted at Acapulco, although married in the Islands, did not hesitate to remarry in Mexico. On the Espiritu Santo in 1618, seventy-five Indians came as common seamen, but not more than five returned.

In the Philippines, the king encouraged the marriage of poor Spanish sailors with native women, and interested himself in the provision for dowries for the Indian women for this very purpose. His Catholic majesty also found it necessary to establish hospitals, and provide physicians and care for both Indian and Spanish sailors and seamen, whose poverty was such that they could not provide for themselves. Said the king in his instructions to the governor of the Philippines,

... I have been told that ... both of them suffer extreme need; ... Both classes die in discomfort, through having no building in which to be protected from the ravages of the climate, and through the lack of beds, food, medicines, nurses, and other necessities.

Such was the type, and status of the men who manned the galleons.

STORY BY PAUL S. TAYLOR WAS REPRINTED FROM AUG. 1924 ISSUE "PACIFIC MARINE REVIEW" FURNISHED FROM LIBRARY PIONEER MEMBER W. EARLE WOHLER SOWP-4 (SGP) STORY CONTINUED ON PAGE-26.

## SPARKS JOURNAL

★★★★★ The "Wireless" - Our Proud Heritage! ★★★★★

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P. O. Box 530  
SANTA ROSA, CALIFORNIA 95402



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~ Dedicated to the History of Seagoing Wireless Operators ~

Special thanks to the following for these documents:  
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S. O. W. P.

The SCIENTIFIC & HISTORICAL RECORD OF THE EARLY DAYS OF WIRELESS